

10 EASY WAYS TO SHATTER LAP RECORDS

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MODEL CAR & SCIENCE

NOVEMBER 1967

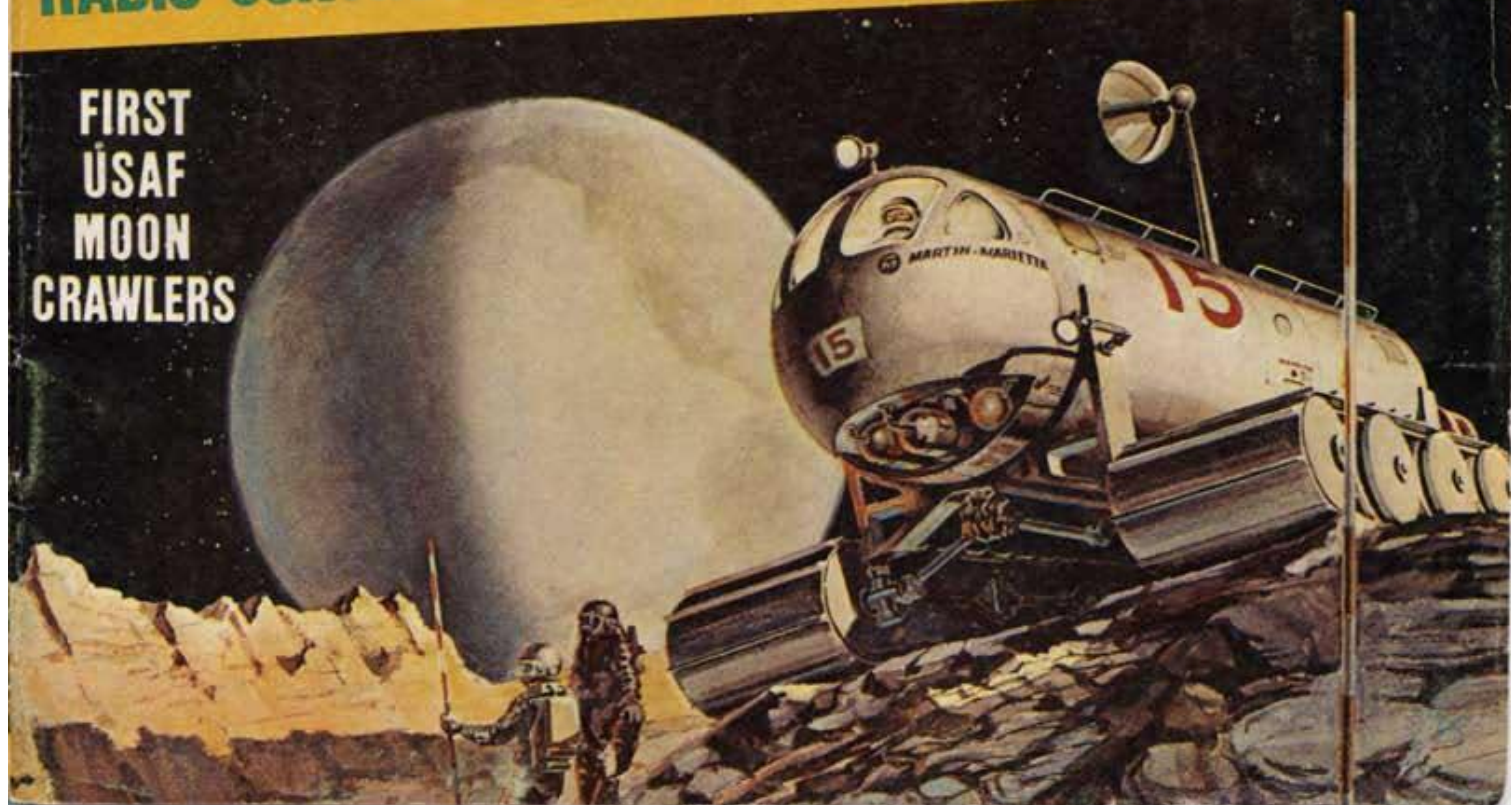
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MODEL CAR & SCIENCE

Volume 5, Number 11

November, 1967

MODEL MAIL	5
Our readers write	
NEW PRODUCTS	8
The cream of the crop	
10 WAYS TO CRACK THE LAP RECORD	12
Here's how it's done in Californy!	
CARS FOR THE STARS	16
What's a star without a personal car?	
R/C ROUNDUP	20
The total radio controlled scene	
1/32 "PRO" CAR	26
It's fast and tough!	
PRO'PLATE CHASSIS	30
Analyzing the MC&S Team Car	
STYLINES	36
Number one in a great new series	
THE BEST IN HOME RACING SETS	38
The Editor's choice	
MC&S MOONCRAWLER CONTEST	46
There has never been a contest like this one!	
HO FUNNY 'TANG	50
A "big mover" in 1/87 scale!	
QUICK CAMARO	54
Would you believe gas powered - for \$12!	
HO RALLYE ROAD - PART IV	58
The end of the road!	
LEAPIN' 'MARO	62
Get a "big jump" on your opposition!	
THE LATEST IN MODELING TECHNIQUES	65
The latest word from Fisher Body	
MODEL OF THE MONTH	68
"Keen Kars" from our readers	
QUESTION SESSION	72
Don Emmons tells all	
R/C SIGNALS	73
The world traveler returns	

ON THE COVER — That beautiful roarin' rod is nearly overshadowed by the ominous presence of the Martin-Marietta mooncrawler, seen creeping (crawling?) across the rugged Lunar landscape. Our wild mooncrawler contest, starting on page 46, will give you a chance to try your hand at building one of those way-out machines. There's glory and gold to win, so check it out, quick!

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model mail



HELP FOR THE RALLYE ROAD

I tried your track for HO and it was fine except for three small changes I had to make. To my knowledge, there is no one who makes a $\frac{1}{8}$ " circle, 6" radius curved track. In place of these two pieces I substituted two pieces of Aurora $\frac{1}{8}$ circle 9" radius curve. To adapt the track to these longer sections, I had to substitute a 6" straight for one of the 9" on the pit straight, and replace the 6" straight near the ess bend with a 5" piece.

Georgeann Kelly
Brooklyn, N.Y.

It's a pleasure to hear from our female readers, even when pointing out one of our mistakes. Georgeann's answers will work just as well as the cutting and glueing of the 6" sections outlined in the Sept. issue and in this month's concluding article on the HO Rallye Road.

RALLYE FORWARD OR BACKWARD?

There is no direction of running indicated on your plan for the HO Rallye Road. Does it make any difference which direction?

Brad Parker
Dallas, Texas

It makes no difference which way you race on the Rallye Road. You will, however, find that there is a difference in lap times because some parts of the course can be negotiated faster in one direction than in the other. Driving in the opposite direction

almost makes it a whole new track. Some clubs hold their races for members only in one direction, then change and run the opposite direction when visitors from other clubs are racing so that every one has a more equal chance. The "home" club has to "learn" their track all over again just as the visitors do.

THE ROCKET BROTHERS

I have three model rockets and my younger brother has four. We have used an Estes Electro-Launch for each of our fifteen launches to date. We both enjoy this hobby very much because it is challenging — I actually enjoy building rockets more than I do launching them.

We have found many uses for the Estes "Paper Reinforcing" (page 69 of their '66 catalog). It provides an excellent reinforcement for joining body halves, etc. It is white, so there is no problem in painting over it.

Gary Silverstein
Philadelphia, Pa.

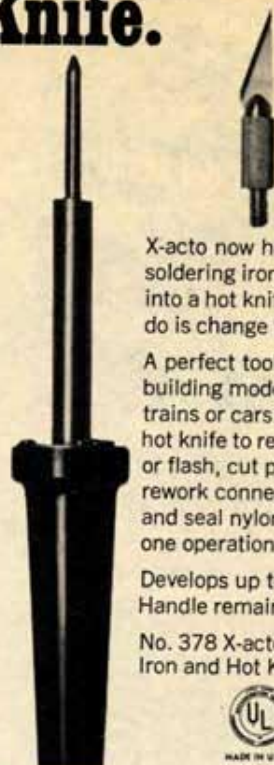
NOT A SELF-STARTER

I recently purchased one of the ready-to-run 1/24 scale cars. The first time I took it down to the track to try it out, I wanted to break in the gears. I blocked up the rear tires off the track and revved up the motor. After this the car would not run unless I push it, and then it only runs slowly and noisily, gaining no speed. Could I have revved it up too high? How would I go about fixing it?

Kevin Webendorfer
Santa Maria, Calif.

You have indicated the most likely problem yourself, Ken. You apparently pressed your controller all, or most, of the way down when breaking in the gears. As a result, the motor was allowed to rev faster than it ever could when packing around the weight of the entire car. NEVER run a motor at full throttle when it is not on the track. Use only about one-half throttle to run in gears and bearings. You will have to disassemble the motor to find the exact solution. Look at the area where the tiny wires are soldered to the

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6 / model car & science

copper commutator. Chances are
that either one or more of the
wires has pulled away, or one of
the copper segments of the com-
mutator is loose. With skill, you
may be able to resolder a loose
wire, but it is likely that an en-
tire new armature will be need-
ed.

WANTS TO FIND THE "LITTLE PEOPLE"

I have been reading MC&S for
some time, and I've seen many
references to scale model people.
The hobby shop where I buy my
models does not carry them.
Where can I get them?

Louis Lettino
Bridgeport, Conn.

Often a hobby dealer does not
carry an item because he does
not know you want it. Most will
order for you if you ask. Preiser
has a excellent set of HO pit
crews and spectators, and Mono-
gram makes several sets for 1/32
or 1/24 scale. Ask your dealer to
order these specific brands if he
has no other suggestions.

HOT MOTORS AND LOW RESISTANCE CONTROLLERS

I'm new to model car racing,
and one of the facts I've discov-
ered is that a rewind motor re-
quires a lower resistance con-
troller than a stock motor. Some-
one told me that I would burn
out my standard controller if I
used it to race my 3-volt rewind
motor and car. Why?

Jimmy Pryne
Brecksville, Ohio

The basic reason why a re-
wind motor requires a lower re-
sistance controller is that the re-
wind requires a greater flow of
power sooner than a stock mo-
tor. With a stock controller, the
resistor block has relatively
small wires. A rewind needs so
much current that only the top
few wires of the resistor are
used to control it. As a result, the
"fine" wires get hot and eventu-
ally break. A lower resistance
controller has larger wires in the
resistor block so that more of the
wires are used to control the car.
On many controllers, you can
simply buy a lower value resistor
block to replace the stock one.

COMMENTS ON THE "NEW" MCS

In the September 1967 issue
you changed the name from
Model Car Science to Model Car
& Science. Why? Keep the mag-
azine in the model car building
area please! Rockets or trains do
not belong in a model car book.

Glen Sigmon
Tarpon Springs, Fla.

Why are you guys ruining the
best model car magazine with
rockets, boats, and such?

John Bigger
Long Island, N.Y.

Finally! A magazine with ar-
ticles on rockets and boats for
the beginner! Will the MC&S ed-
itors keep printing articles on
other subjects besides cars?

Rick Andersen
San Francisco, Calif.

These three letters are only
samples from our poor over-
worked mailman's bag. The re-
sponse to our "all-models" ideas
has been far greater than we ex-
pected. You guys and gals really
do care! We won't comment fur-
ther here, since the editorial a
few pages away states our po-
sition clearly. We appreciate a
well-detailed model of any me-
chanical object be it car, train,
boat, or rocket. We hope the new
modeling ideas we present will
help you to see more of the world
about you — modeling world,
this is.

COLORING WINDOWS AND CRASH SCENES?

I have a few hints that will
help to improve the realism of
the crash scene photos you often
print. The cars should have some
dents or missing wheels, the road
should have skid marks, and the
fence should have a gaping hole
where the car went through. I
have also found that the felt-
tipped marking and writing pens
make excellent tools for coloring
the windows in model dragsters
and customs. Magic Marker
seems to work best.

Chris Amick
(No Address)

Your tips are fine, Chris. We
always welcome photos from
readers of realistic scenes, and a
crash scene is one way of really
creating some action.

make it a
model Christmas



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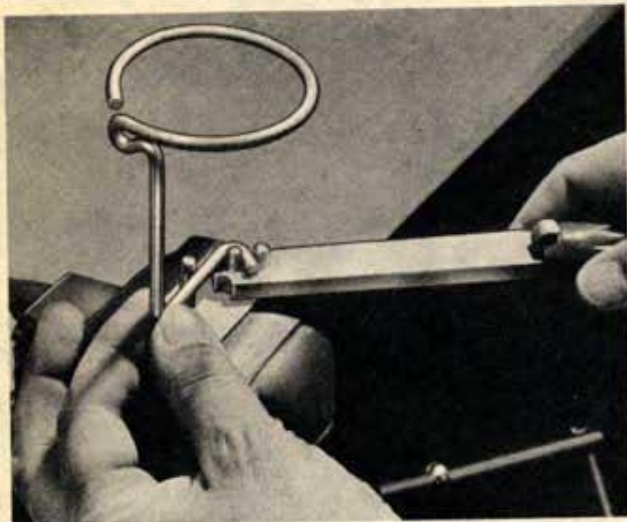
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NEW PRODUCTS



A pocket size blowtorch for scratchbuilders is now available from Walter Kidde & Company, Inc., Dept. MCS, 675 Main St., Belleville, New Jersey 07109. Measuring less than six inches in length, 'Minitorch' will heat to full intensity in seconds and after use, can be stored or carried easily in a pocket. It

requires only a quarter turn of the charger to release a steady flow of butane for ignition. A reverse turn closes the valve and extinguishes the flame. Price and more information can be had free of charge, by writing directly to the company.



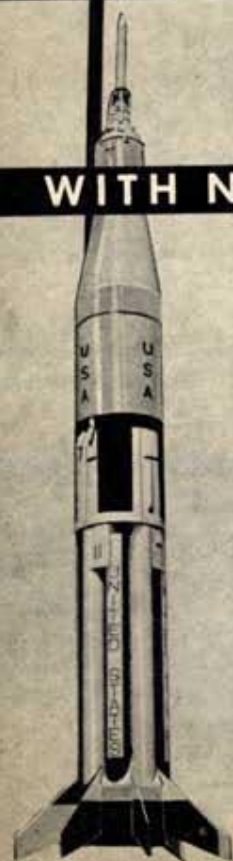
And still more goodies for the scratchbuilder! The WIREFORMER, is a simple, cleverly conceived little hand tool that looks like a can opener but shapes wire with precision accuracy, and so easily the pressure of one finger will work the average wire into any shape desired. Ideal for the small diameter rod used in slot chassis, this tool can be obtained by direct mail for just \$3.98. Send to Vinkemulder Mfg. Co., Dept. MCS, 917 Princeton Blvd., Grand Rapids, Mich. 49506.

The scratchbuilder is king this month, as you can see by scanning this New Products section. This "Nibbling Tool" cuts light sheet metal like a punch and die. It's ideal for working with templates, shims, and model parts, and would be a "natural" for making pan chassis. Cuts holes to any shape and size. The capacity is 18 gauge steel (.046") and 1/16" aluminum, copper, and plastic. It cuts with no distortion around the edges of the hole. Write directly to Adel Tool Compny, Dept. MCS, Chicago 31, Illinois, for prices and full information.

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BY **JO-HAN**

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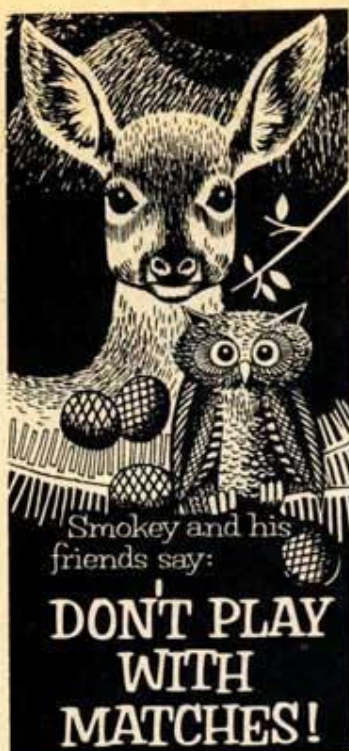


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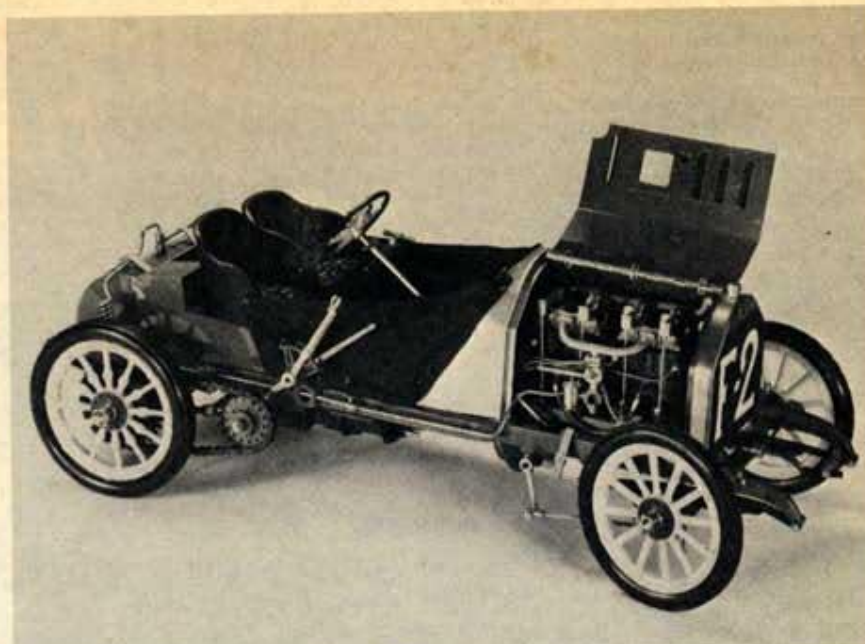
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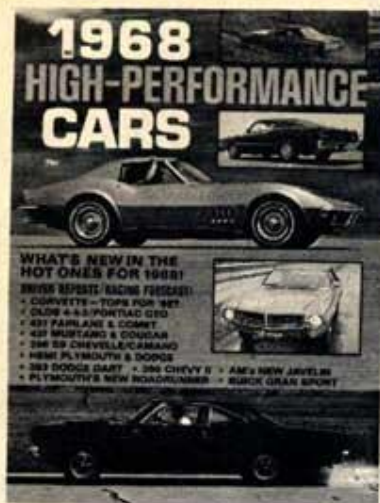
SPEEDY returns!



next month in MC&S

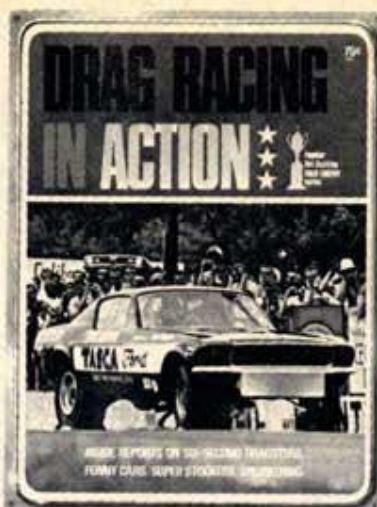
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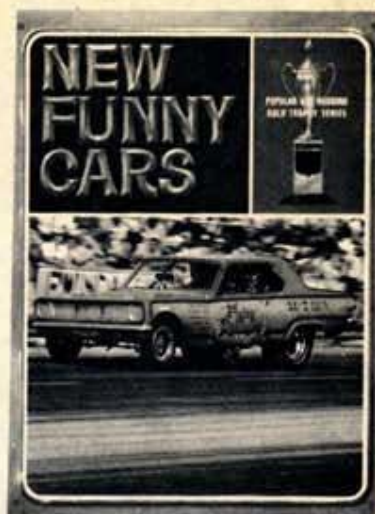
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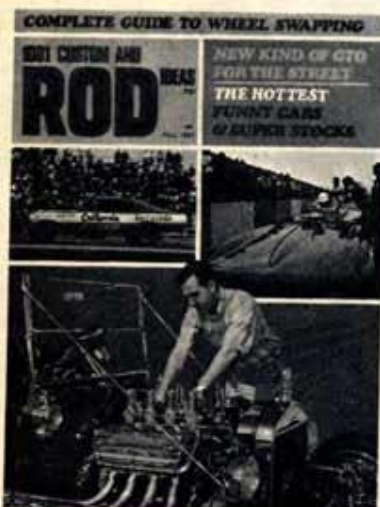
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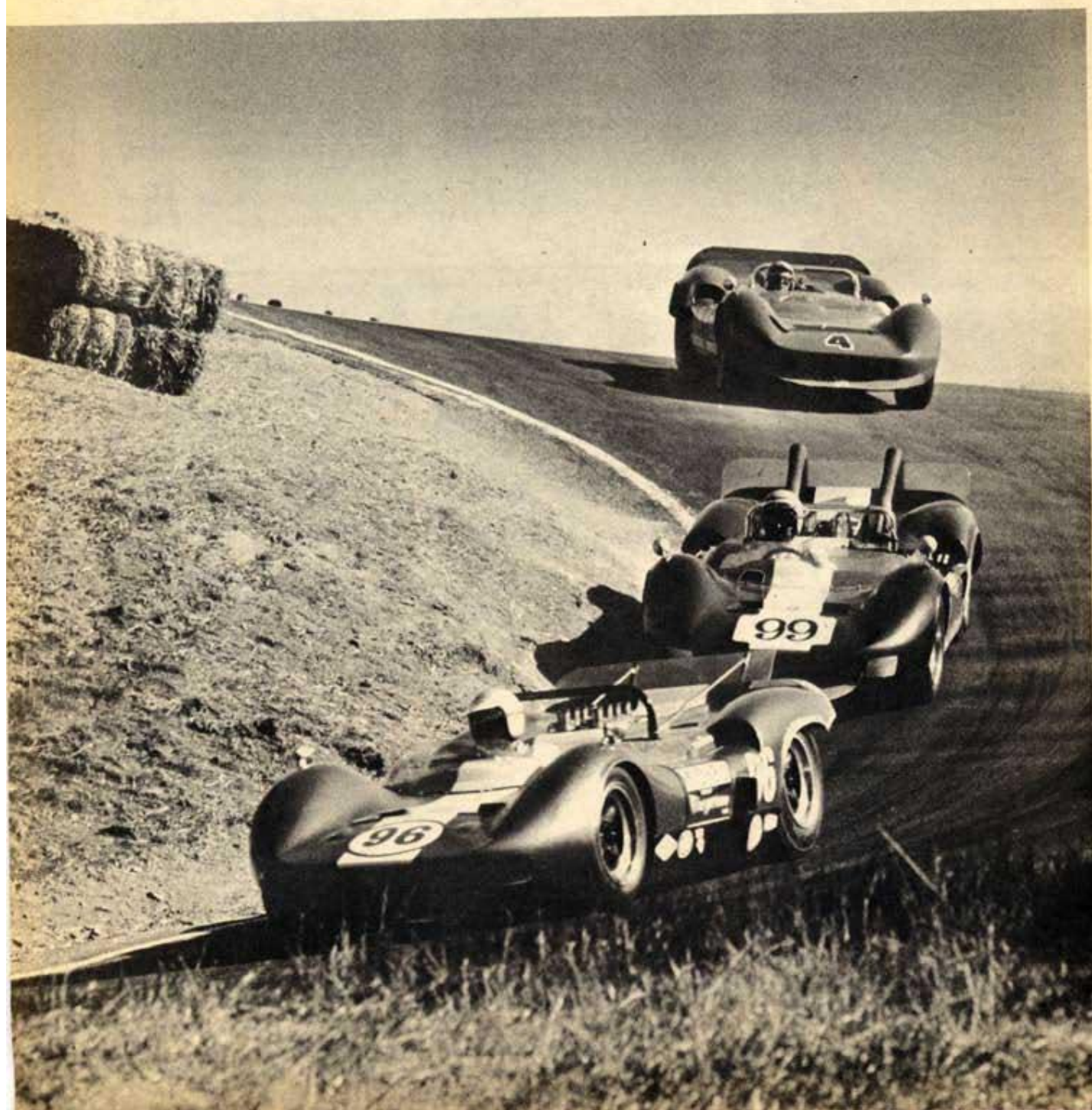
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10 WAYS TO CRACK THE TRACK RECORD

Pro pointers for faster lap times By Chris Chan



Every true slot car racer worth his rewind would like to "own" the record at his local track. Although many records are broken as frequently as every week, there is a certain amount of prestige in walking away with the fastest time ever run. Having your name placed in the record books has a very self-satisfying feeling to it.

How do you get out and turn in a quick qualifying lap? Does the record remain elusive despite your consistent high finishing in races? Why is it that a car you practice against during warm-ups suddenly can go so much faster with a stopwatch on it? Well, not everyone has the skill or the cash to put together a record shattering "jet" slot car combination, but there is a lot that can be done to get your qualifying times way down where they belong. Who knows? You may be the next record holder.

The usual, and most desirable, qualifying method is the "three timed-three free" lap system. The driver is allowed two or three re-orientation and set-up laps, then is timed on his fourth run. The lap immediately following the first timed is a free lap, giving the race marshal time to reset the clock and announce the driver's time. The process is then repeated two more times. Almost all track records are recorded here. Very few tracks have facilities as in full-size racing to clock every lap, so the only opportunity you have to grab the record is in qualifying. If you're the type that has to be pushed in a race to go fast then you just may miss out on the fast lap glory.

The best place for you to start looking for areas of improvement is your car. The only car good for you to win races with is a car which you can push without deslotting and which does not suffer seriously from power drop upon the use of all of the lanes (amp sucked). If you're out to break the track record you might have to forget the driver comfort angle altogether. Get a good look at the

cars going the fastest in your local raceway's time trials. The motor wind and chassis construction are among the most important things to note.

While on the track with the faster cars you should also note the places where they seem to be making the most time on you. Don't get in the habit of following the faster cars around, just check to see when you are out-braked, hole-shot, or just plain out-cornered. Practice your shut off points and full throttle positions, particularly in these sections.

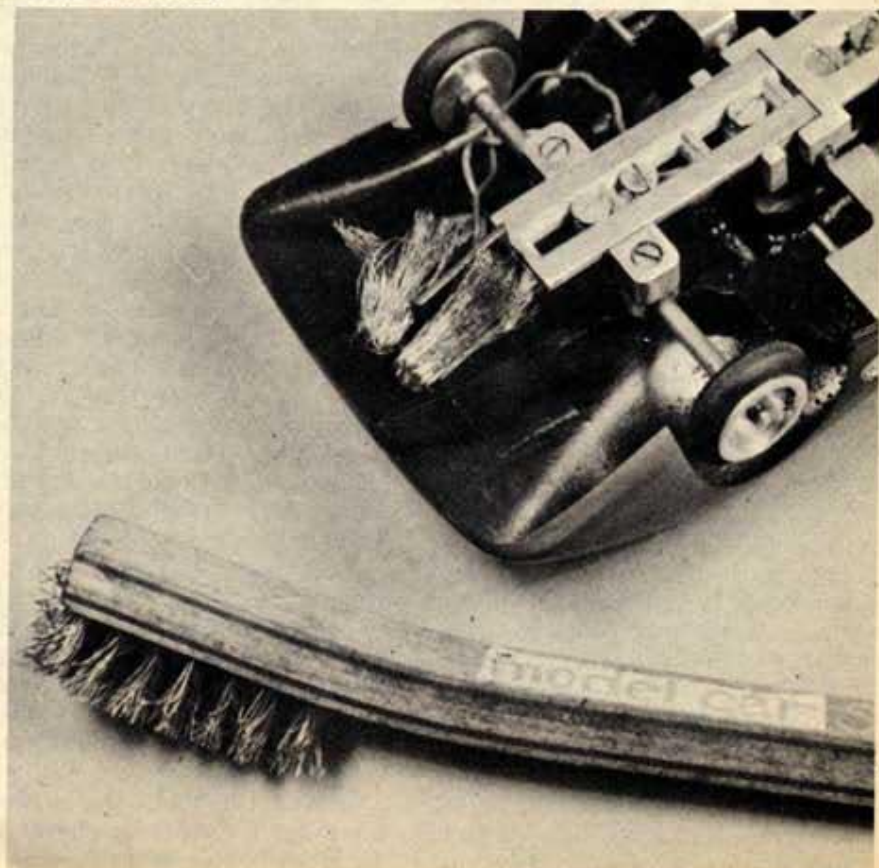
Run alone during the remaining practice periods. This serves two purposes helpful in giving you a chance of breaking the record. First, it lets your car run on full power. Many very rapid cars slow down considerably when others are on the track using up the amperage. Now although it isn't too wise to have a car that gets ampsucked, but jets alone, that may be what

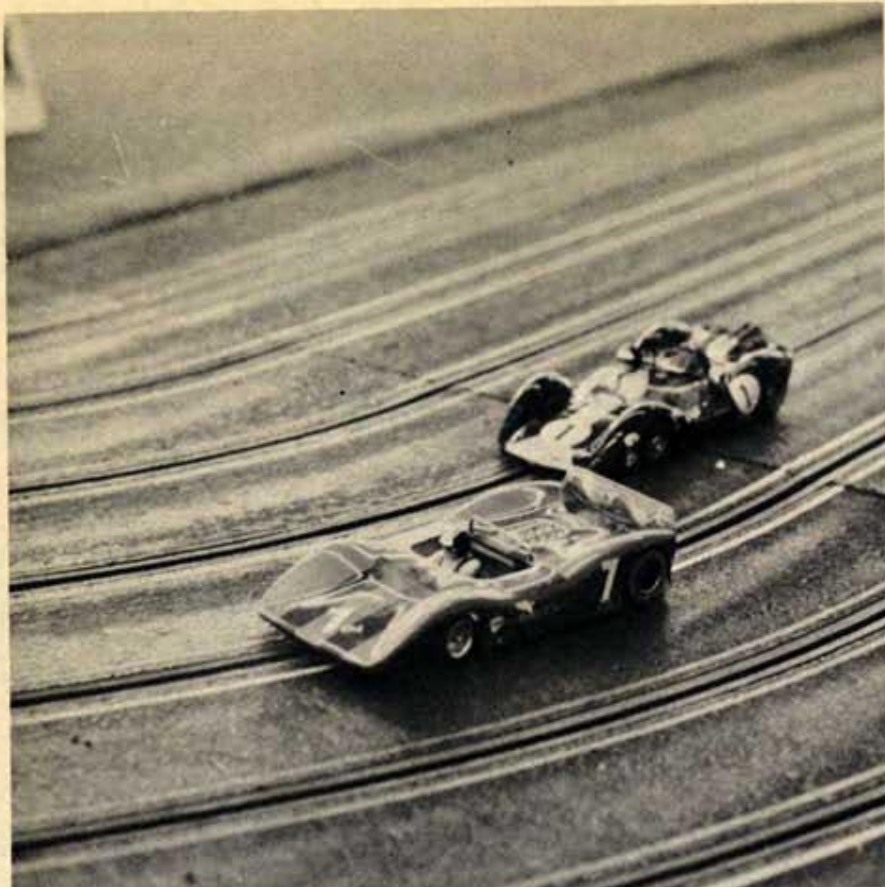
you need to set the fast time. The second advantage of practicing alone is that it gives you an opportunity to see how hard you can press without using other cars as a guide. You'll run alone when you qualify, so it's always best to run alone a bit in practice.

Gearing should be a slight amount lower than the ratios for races. A 4:1 ratio for a long race will give you a comfortable handling car that can allow for slight errors encountered over long periods of time. For the short clocking runs for qualifying, a 4.5:1 ratio will let you pick up the necessary punch you need for coming out of slow corners. Very little time is lost on the straight unless it's extremely long.

To match the lower gear ratio, which will make your car much more agile and responsive to your thumb, you should choose a relatively quick hand control. Either set a Varipower MRC or

Maximum brush contact is essential to drop your qualifying E.T.'s. A small wire brush cleans and straightens them for the best performance.





Check to see where the other cars pick up time on you going into the corners.

a Cox Mk. 7 at 5 to 7 1/2 ohms, or latch onto an equivalent. The investment in a lower ohm control not only lets you run sharp in timing but will handle faster motors. If you have a Cox or an MRC or even the pistol grip Russkit, you can buy just a new resistor and have a competitive control.

Don't limit yourself to just one lane when you set up your car in practice. In almost every case, the timed runs are held on one of the two inner lanes. This is because they are also usually the fastest to run on. Because of this you should first run on the bad (slow) lanes of the track to get your car and timing set up to cope with the extremes. Then when you have completed practicing on the poor lanes you can shift over to the qualifying lanes and finish off practice there.

Now that you have your car completely sorted out for qualifying (proper wind, tires, gearing, etc.) you can make the preparations for qualifying. There are four points so extremely im-

portant that they could make up to 10% difference in lap times. Check your oil for a starter. A thin lubricant should be applied to the axle bearings and a drop of Model Motoring-type grease to the motor shaft. Gear lash is also important. If the proper amount of play isn't being used, a tremendous amount of efficiency is lost. With most of the Nylatron gears, just a slight amount of movement is the best. Tires running on gooped tracks, or using Wintergreen based dressings, need some preparation to be at their best. Rub in your favorite additive before starting your runs. Probably the most important and most often neglected items on this check list are your pickup braids. Always put on a fresh set of brushes in your flag before qualifying and brush them out completely. They won't last very long that way, but they won't have to last very long to qualify.

Relaxing is about the hardest thing for a qualifying driver to do. Everybody gets a little shook

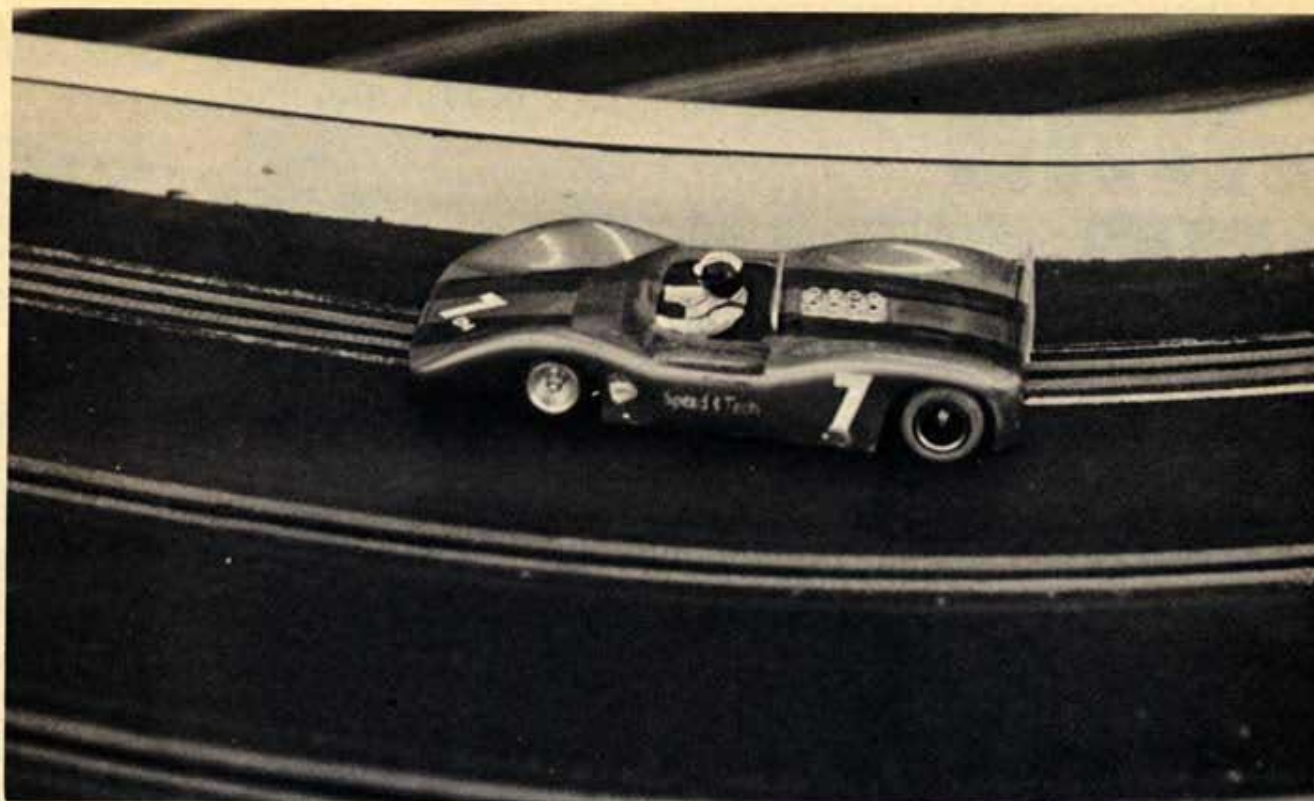
before going out alone with the clock. You may notice, though, that if a buddy is clocking you, and you're trying hard to get a hot time to save face, you can really turn it on without getting too nervous. By trying to re-create this situation in your mind while qualifying, you might be able to gain a bit of time and confidence in qualifying times. If you come up to the track shaking like a leaf it's doubtful if you'll be much of a threat.

A little system I've personally worked out for pole attempts is another simple way to get quicker times and the most out of the car. On the first practice lap set up a rhythm then jet into and through the first timed lap. Press into the turns you thought you may have lost time on in the next free lap while seeing how you did on the first time. Now on the second, set up a very fast rhythm, pushing to your limit without overextending yourself. With the indication of the first two timed clockings cruise out the last free lap and super-rocket the last timed run. It's very important to get the most possible uninterrupted running time into the six laps you have on the track. Only if you noose yourself and spin about, should you pull in for a pit or if the car is obviously running oddly. If you do anything outside of rebrushing the braid or regooping the tires, the first laps have been wasted.

The last way to crack the track record is the key to all record breaking attempts. Don't give up! Keep trying! Beginner's luck doesn't mean too much on a big slot car track, so if at first you don't succeed, try, try, try, try.

**SPEEDY
returns!**

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While running in practice be sure to try out the bad lanes. If you can jet in the gutter lanes then you should really move in qualifying on the center lanes.

Don't rush off to clocking without remembering your tires. Traction tonics will give you that extra edge in cornering ability.



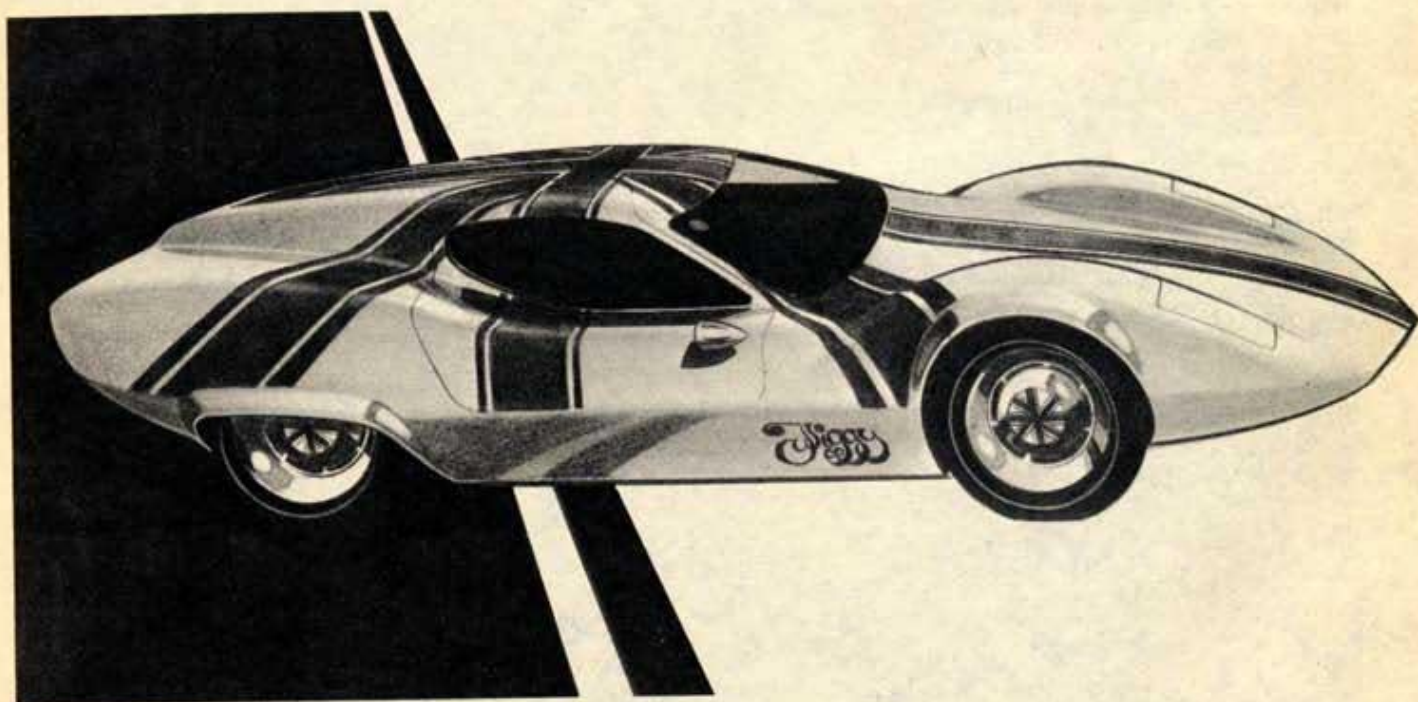
CARS FOR THE STARS

*Here's how to model a Boss set of wheels
for your favorite performer*

Ford "J" Car for Twiggy

The English flag, Twiggy's country colors, set this "mod rod" apart, in keeping with the fashion world's latest craze. MPC's "J" car is only mildly changed. All scoops are filled, rear wheels covered, and the side windows re-shaped. Racing mirrors come from IMC's Lotus-Ford kit, or can be handmade.

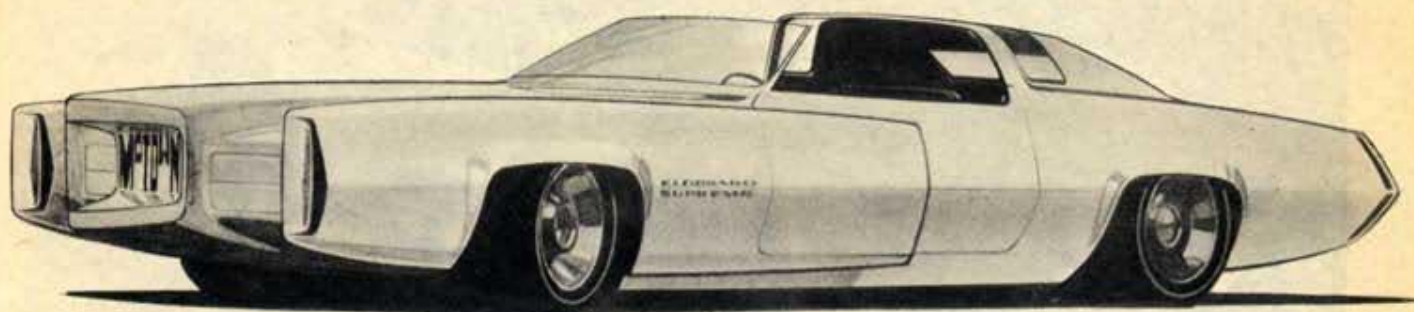
By Harry Bradley



The Monkees have their hairy GTO Phaeton, and a pair of Mustangs send Sonny & Cher in style . . . but what about the many other "in" groups who need a set of mod wheels? The following five cars can all be built from existing kits — some for the beginner and others for the more advanced model makers. Each car is designed for a certain performer or group, but with some imagination you can style a car for your favorite celebrity.

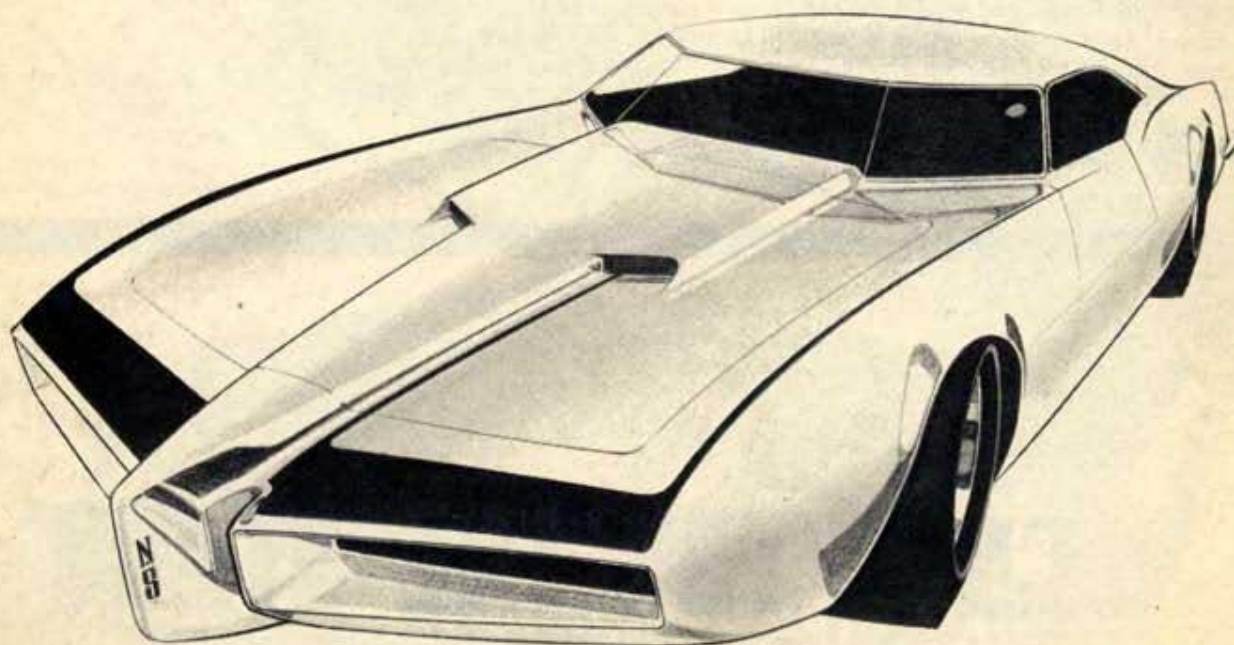
'67 Caddy Eldorado for The Supremes

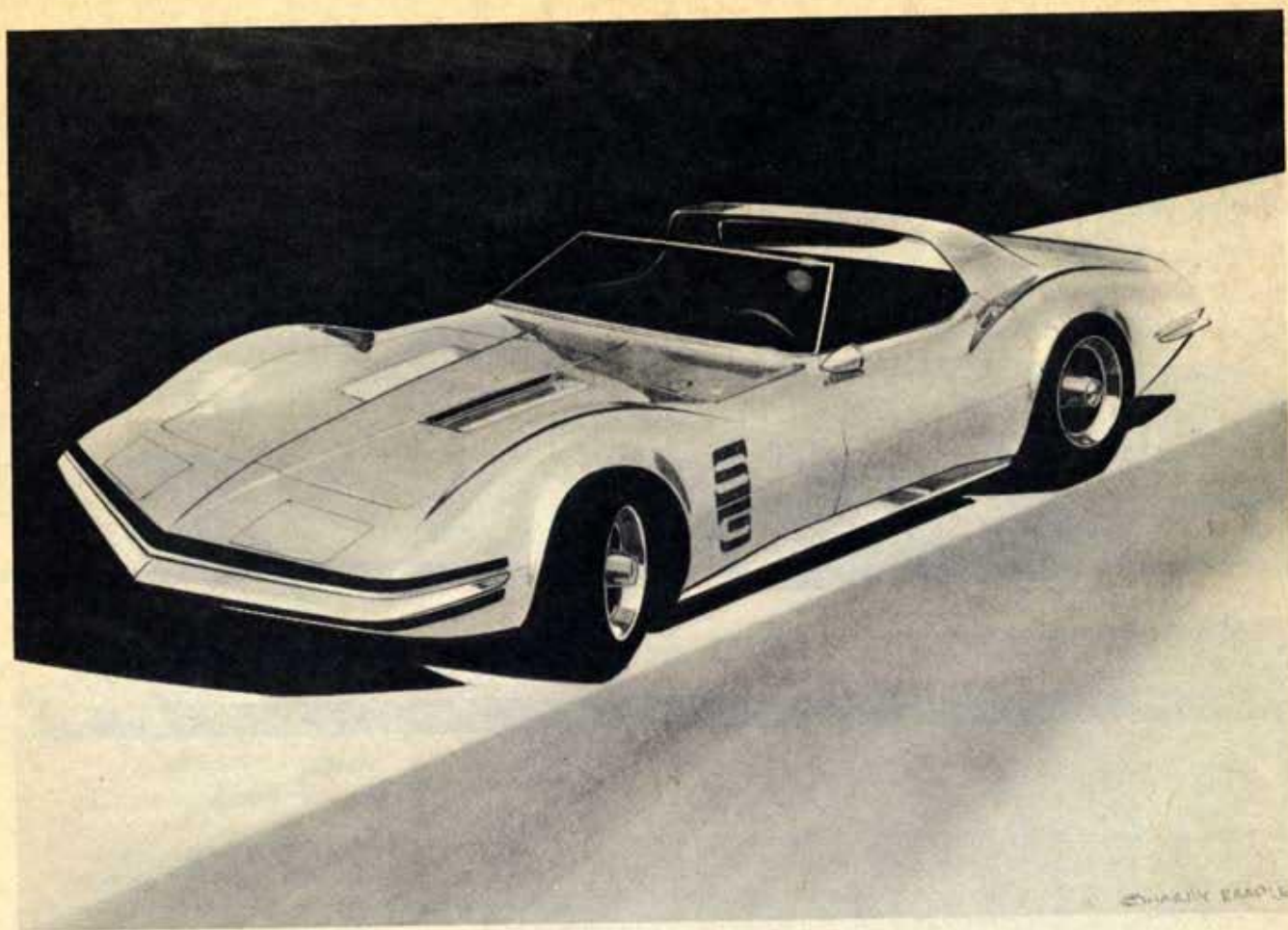
America's outstanding female vocal group deserve to ride in style. This Jo Han model has three basic changes: the roof is altered to a Deville style, with a quarter window that actually loops over the roof. Front fender is extended back through door in a separate form away from the body. The stock grille is removed and replaced with a unique "V" window behind which is the Supremes' "Motown" signature.



Pontiac Firebird for Nancy Sinatra

For Nancy, a compact car with plenty of style and gutsy power. The JO-HAN 'bird is changed, mostly around the nose, where the prow is pulled dramatically forward and the Pontiac split grille theme is enhanced by creating twin recessed openings. A hood blister similar to the 427 Sting Ray power dome also has twin scoops. Nothing could be newer than the three panel windshield, like the control tower of an atomic aircraft carrier.

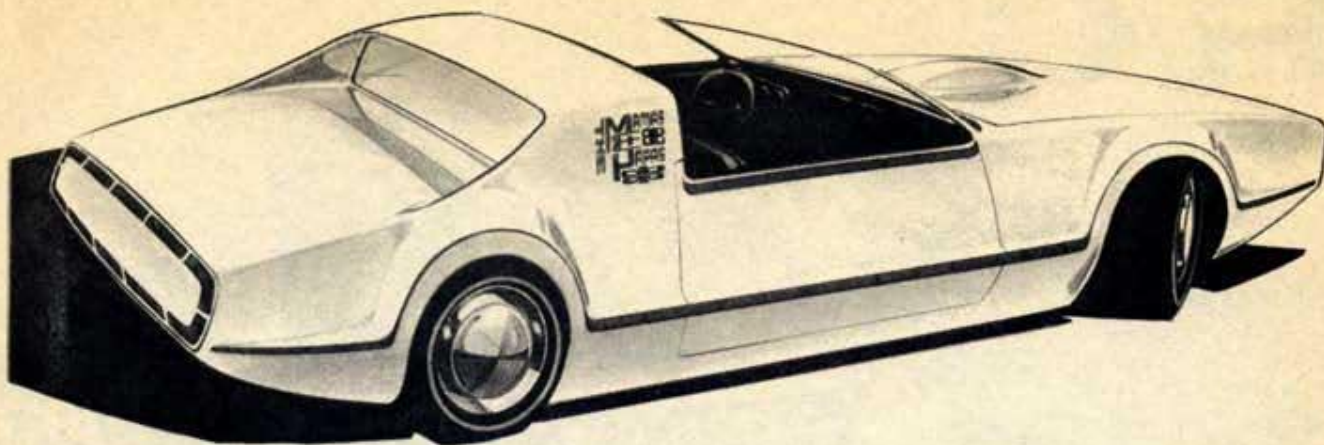




Mako Shark for Simon & Garfunkel

MPC's Mako Shark becomes a two-place roadster for these swinging guys. For the skilled model maker, there's plenty of challenge here. Turned into an open car, a flared roll bar is added. The new deck extends back to a spoiler. On the hood is a "V" design, on either side of which are carb intake slots. "Over and under" grill openings frame the blade bumper. New hood and retractable headlight doors are marked in body.

CARS FOR THE STARS

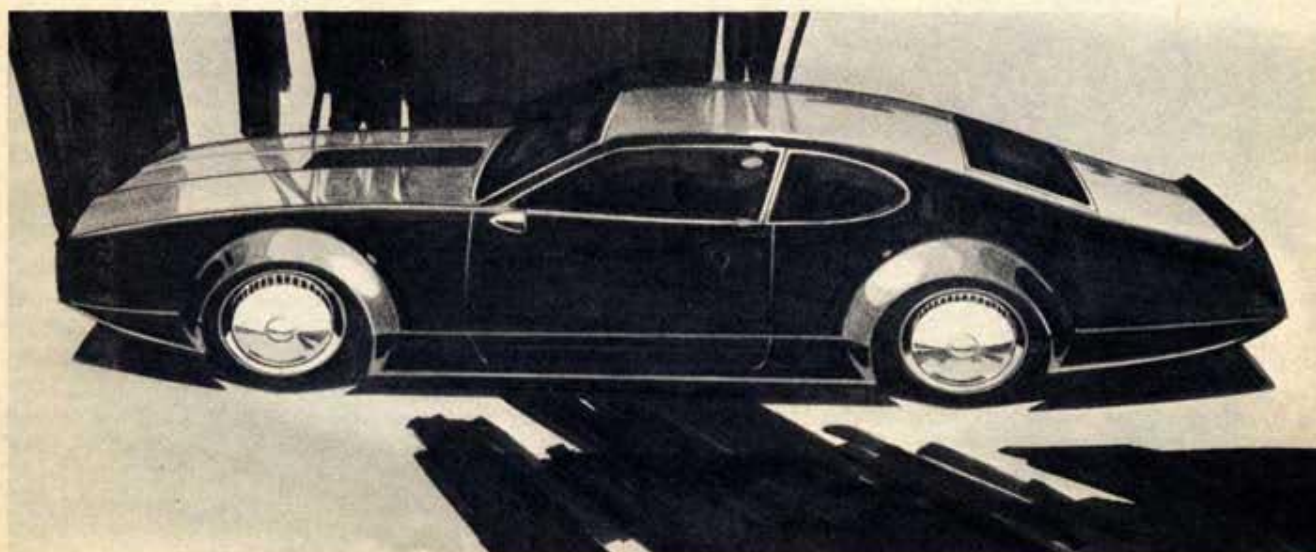


OLD's Toronado for The Mamas & The Papas

California Dreaming's easier in this wild machine with plenty of room for even Mama Cass! Big changes are in the roof; the forward half is cut away and the quarter windows filled in; the rear window is recessed as in the current GM coupes (GTO, OLDS 442, Buick Gran Sport and Chevelle 396SS) ; Both bumpers are removed and a segmented taillight built in around the edge of the rear panel. Note stripe work which can be duplicated in tape.

OLDS 442 for the Grateful Dead

Somber city, black and grim, but mucho work which the skilled modeler can make come alive. A Toronado also makes the same ominous scene.



R/C



ROUNDUP

By George Siposs

R/C stands for, in case you have not heard about the latest craze in model car racing, "Radio Control." And *that* stands for *action* as the cars drift around turns, take off like a scared cat and maneuver at your command. And all this without visible wires, guides or slots of any kind. *You* actually drive the cars.

The ultimate in model car racing is here.

There used to be a time when only highly advanced hobbyists, engineers and scientists by trade, would talk about remote controlled model racing cars. In hushed voices they would explain the intricate workings of their handmade rigs. The "ace in the hole" used to be when they casually mentioned the fantastic sums they had to spend to create the sophisticated radio gear. They spent hundreds of man-hours on fabrication of each part. This era could be called the "Dark Age" of radio control for model cars.

Today we live in the "Golden Age" of R/C. Without so much as lifting a screwdriver you can simply take a super-duper car out of its box and race it! There are simple toy-like cars and there are sophisticated miniature automobiles. In order to enable you to make an intelligent choice I shall divide the field into several categories.

Slotless Raceway.

Should you want to make the transition from slot tracks to remote control a nice and easy one, you should consider the Radio Raceway, an Italian made, devilishly simple device imported by Aristo-Craft Distinctive Miniatures of New York. The smallest track of this kind occupies a space of 95 by 40 inches and can be set up just like any oval, figure eight or road course slot track. There are *no* slots on the track. Instead, there are metallic conductors imbedded in the track surface. You merely place the two specially constructed cars (Ferrari and Ford GT) on the

raceway and plug the power supply into a wall outlet. The cars are actually controlled by electronic circuitry and you can steer them left or right, pass your opponents, take the inside lane, etc. Just like a real race!

The track sections are about twice as wide as home racing sets and there is plenty of room for maneuvering. The control panel is held in your hand, and you can control speed as well as direction from where you sit. The price is \$179 for the basic set and it includes two 1/24 scale cars.

R/C Toys

Though quite complex in their construction, cars in this category cannot be raced against each other. Only one car can be run at one time. An excellent example is the "T.V. Van" imported by Aristo-Craft. This little gem scoots around on any smooth, level surface, with its tiny radar antenna busily rotating on the roof. When you touch the control button on your trans-

mitter, the car changes direction and runs towards a point to which the antenna happened to be pointing at the moment you blipped the button. Hardly a race car, but man, you really have to be "awake at the button" to run an obstacle course! The price is a mere \$20 and it serves as a trainer or "guest-car" if you don't want your friends to play with your real R/C racers.

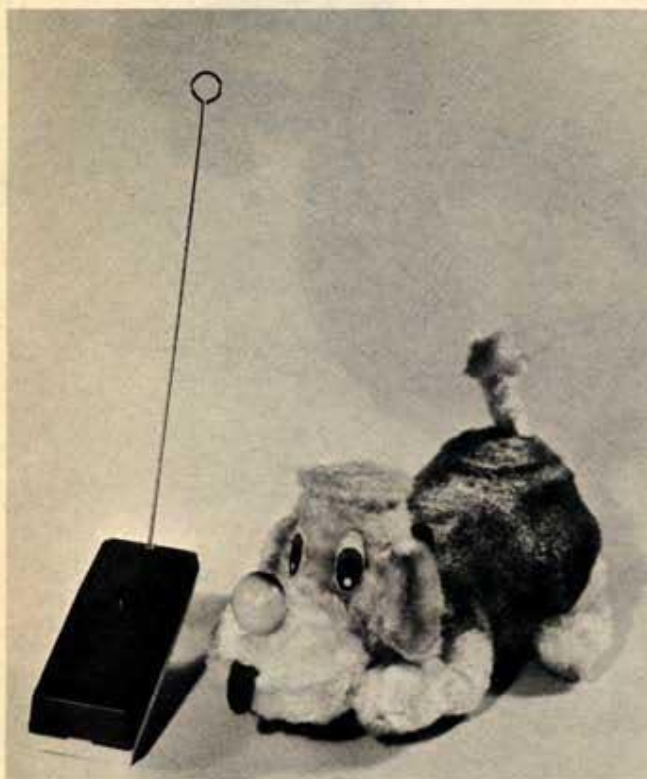
Now we get into more realistic equipment. The Japanese made "Sylvia" coupe, also imported by Aristo-Craft Distinctive Miniatures (the R/C man's friend) features all the goodies you would expect to find in high-

priced machinery. Yet this unit sells for a mere \$39.95! The manual control panel has a button on it which has to be "learned" before you can operate the car successfully. You "blip" the button for long or short intervals and this changes to the next "function" inside the "brain" of the car. This "brain" actually sequences the events that take place.

The first time you push the button the car starts up. When you press it again it turns left. The next push makes it turn right. A long push makes the car stop and then the cycle is repeated. You do not have to fol-

low this exact sequence if you do not want to because by very quick blips any event in the cycle can be by-passed. It takes about 10 minutes to learn the sequence but then you can practically make the car eat out of your hand!

Two batteries are used to power the motor and they provide many hours of enjoyable driving. The receiver is of the super-regenerative type, which simply means that you can only run one car at a time. If you ran two cars simultaneously both would respond to your commands. The Sylvia has a water equivalent: a motor boat which responds to



Miniaturized transistor circuits make it possible to guide these toys from across the room. Weird, what?

the same sequenced commands as the car.

Electric R/C Racers

Now we are moving into the "hot shot" category. First, a peek at a fantastic ready-made car, the Uni-Corona. This item is a well-engineered model racing car with such features as proportional steering, forward and reverse, and high and low speed. There are obstacle pylons included in the price of the car which is \$69.95, imported by Aristo-Craft. (Do they ever

stop?)

Proportional steering simply means that you can make the car turn sharply, or in a very gentle manner. It will obey your every command, just drive it like a real car. Two of these cars can be raced simultaneously as long as your cars and transmitters operate on separate wavelengths. If you only have one car you can set up exciting obstacle races just like the slalom competitions of full-size sports cars.

Testor, the well known paint



The "TV Van" has a rotating antenna on its roof. When you push the transmitter button the van changes direction.

and model airplane manufacturers (of late, slot racing equipment as well) sell an authentic replica of the Mustang in 1/12 scale. This car is over 15 inches long and is completely detailed inside and outside with chrome, simulated leather, racing stripes and other goodies.

The car is proportionally steered by an extremely ingenious method, built into the control panel. You can also stop and start the car during a race. Most important is the fact that up to

five of Testor's Ford Mustangs can be raced at one time! We usually set up a road course on the garage floor or basement. A low and high speed switch is located under the chassis to enable you to learn "driving" first at low speed until you become proficient enough to tackle high speed runs. Man, you can really bomb down the straightaways with this rig!

The Testor Mustang sells for around \$100. Here is a hot tip from ol' George: If you want to make your Mustang different from anyone else's, get a GT body from AFM Wen-Mac, 11500 Tennessee Ave., Los Angeles, Calif. 90064. Ask for Part No. 305-160, WenMac 2 plus 2. Price is \$4.

Willoughby Enterprises of 14695 Candeda Place, Tustin, Calif. handles a real nice R/C car kit made in Germany by Schuko-Hegi. The kit includes a plastic body (Porsche 901 or E-Jag), chassis parts, wheels, tires and hardware. You have to assemble the car from the ground up. Batteries and variable ratio electric motors-gear-boxes are included in the price which is around \$50. Your choice of radio gear will have to be installed. Write to Dale Willoughby for further information on this excellent kit.

NAMCO of Petersburg, Michigan and ACE R/C of Higginsville, Mo. also sell chassis and servo kits for radio controlled electric powered cars. Prices start in the \$35 range for cars and you can save money by building up the radio components yourself. These cars usually cost approximately \$150-\$200 by the time you finish the transmitters, etc.

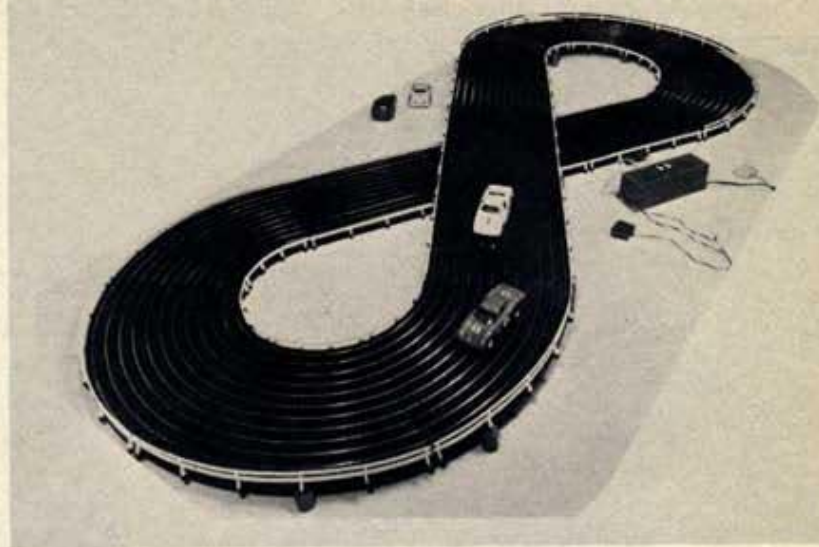
Engine Powered R/C racing.

You must have noticed that we have been progressing in our roundup in a manner which puts the simplest cars first and as we go along we get closer and closer to the ultimate.

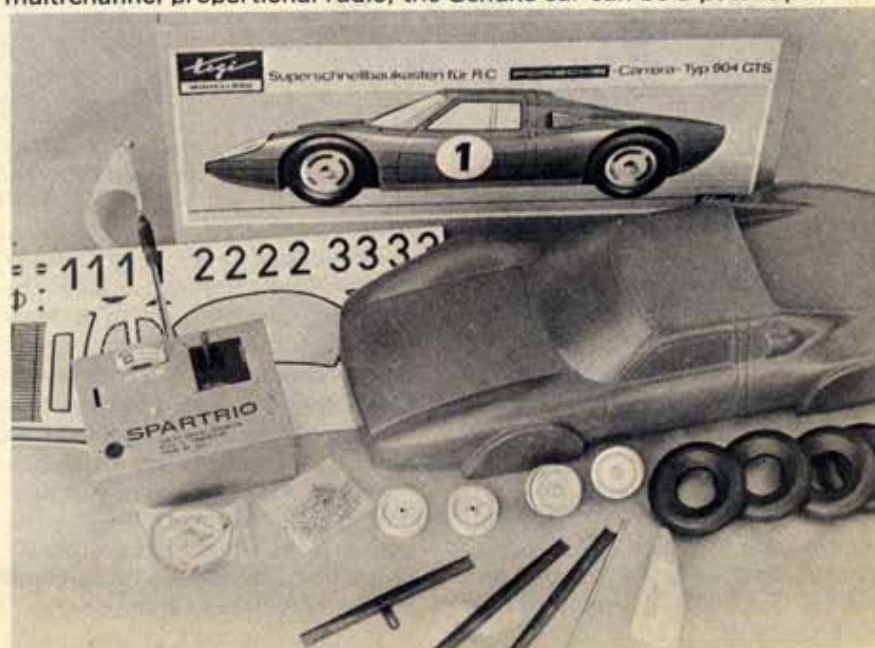
One of the latest items to hit the market is the Monza GT car in 1/12 scale. This car is fully assembled and it features machined aluminum wheels, trued tires, hardened steel axles, a cen-



The Radio-Raceway is a huge track on which two radio controlled cars can be raced. You can pass other cars too.



The German-made Schuko car has a vacuum-formed body. (E-Jag or Porsche 911). Machined wheels, tires and all necessary hardware are included in the kit sold by Willoughby Enterprises. With the addition of multichannel proportional radio, the Schuko car can be a potent performer.



trifugal clutch, sidewinder engine and two channel radio equipment to operate proportional steering and proportional throttle. The engine is a modified .15 cubic inch model airplane engine. Various gear ratios are available to enable you to set up the car for various track conditions. The front suspension is spring cushioned to absorb shocks on rough tracks. The body is vacuum formed from Butyrate Styrene.

The Monza GT cars are com-

pletely built up and tested at the factory. Up to five cars can be raced at one time. The price of Monza GT cars including radio equipment is \$399.

At the top end of this R/C roundup is the 1/8 scale "SONIC" made by Ra/Car, the latest entry in this field. The Ra/Car people have made an important breakthrough in that they engineered the car just like a full scale Grand Prix machine. The Sonic features all-independent suspension with unequal length

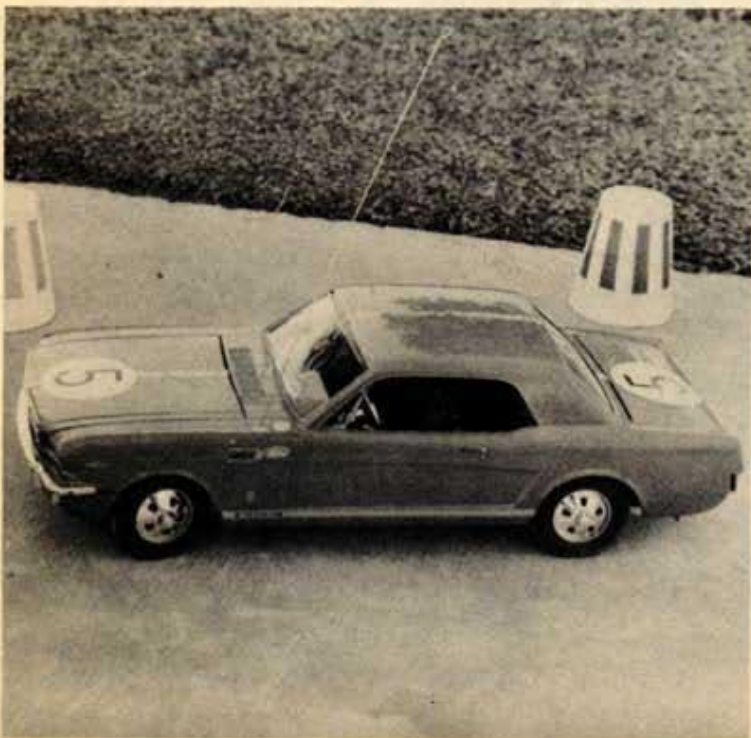
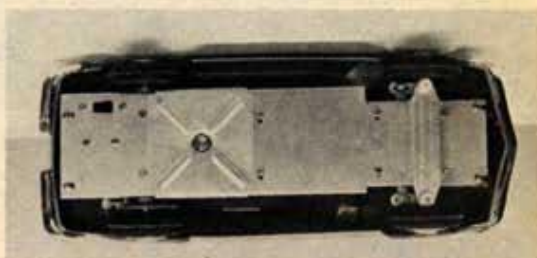
wishbones, shock absorbers, universal joints, a close ratio gear-box that you can actually shift from low to high as you start up and "down shift" as you approach a corner. Every part of the car was designed with the owner in mind to save precious pit time that may cost him the race. The wheels are true cast magnesium, shod with special molded tires. The engine has a racing head which prevents overheating. The SONIC is an Indy-Formula body and other styles



Sold by Aristo-Craft Distinctive Miniatures the "Silvia" represents the lowest cost R/C ready to run car.



The transmitter is hand-held. You could put it in your pocket and "command" the car to perform at your will. The bottom of the car reveals a well-made chassis, on-off switch, steering rods and drive gears.



The Testor car is in 1/12 scale. It features proportional steering, stop and go, and two speeds forward. A few minutes out of the box and the car is running on our home made race track. A "ball" for \$99.95. A very interesting road course can be set up with the plastic pylons supplied with each Testor car.

will follow soon (e.g. Dragster, Sports, GT, Daytona Stocker, etc.). As I talked with Bill Newhauser, Production Manager at Ra/Car in Santa Ana, Calif. they were tooling up for high-volume production. The cars are sold in kit form for approximately \$75 for the chassis and all running components. To this you have to add your engine (usually \$10-\$22) and your radio equipment.

Completed cars will also be available soon.

Here then is the lowdown. Radio controlled cars are a practical reality, and even without much previous knowledge you can start in this fascinating sport. Radio control components are usually of the plug-in type so that no soldering has to be done.

A last word of advice: if you

want to race several cars simultaneously get "superheterodyne" radio. The other type, called "superregen," can only be operated for one car at a time.

Enough said. The equipment is here, and the next step is up to you. R/C racing is costly only at first, there are hardly any recurring expenses except for batteries. The track is fast, take the wheel and rrrrrrrroar with R/C!



Equipped with the Wen-Mac body, the Testor Car is a real beauty and it performs too. Be careful when you modify the components or you may void the warranty.

Electric R/C racing is clean wholesome fun. The whole family can participate in one way or another.



The Toyota-Corona, sold by Aristo Craft, is the only low priced R/C car with proportional steering.





The Monza Mustang is a 1/12 scale car. It has a vacuum formed body, frame chassis and 1/4 inch axles. The Monza car comes complete with two channel radio for \$399.00.

The Ra/Car "Sonic", in 1/8 scale, is the most highly sophisticated of all R/C cars. It has all independent suspension plus. . . . a two-speed gearbox, cast wheels, special molded tires, shock absorbers and other goodies designed to give you the sight and the feel of the "real thing".

MANUFACTURERS

- Aristo-Craft Distinctive Miniatures
314 Fifth Ave. New York, N.Y.
- Ace Radio Control
Box 301 Higginsville, Mo.
- North American Hobbies
7423 Bacon Rd. Petersburg, Mich.
- Testor Corporation
620 Buckbee St. Rockford, Illinois
- W. S. Deans Co.,
8512 East Gardendale, Downey, Calif. 90242
- Bonner Specialties, Inc.
9522 W. Jefferson Blvd. Culver City, Calif.
- Proportional Control Systems
4963 1/2 Valley Blvd. Los Angeles, Calif. 90032
- Micro Avionics
530 Mountain Ave. Ontario, Calif.
- Orbit Electronics
11601 Anabel Ave., Garden Grove, Calif. 92640
- MRC-Futaba
5300 21st Ave., Brooklyn, N.Y.
- Transicom, Inc. (Formerly J.T. Goode Co.)
870 Production Place, Newport Beach, Calif.
- America's Hobby Center
West 22nd Street, New York, N.Y. 10011
- Monza Accessories
7837 Sepulveda Blvd. Van Nuys, Calif.
- Willoughby Enterprises
14695 Candeda Pl., Tustin, Calif. 92680
- Ra/Car Developments
3025 So. Kilson Dr. Santa Ana, Calif. 92707
- Royal Products Corporation
6190 East Evans, Denver, Colo. 80222
- F&M Electronics
137 Vermont, N.E., Albuquerque, N.M.
- E-K Products Inc.
3233 W. Euless Blvd. Hurst, Texas 76053
- Cannon Electronics, Inc.
13400-26 Saticoy Street, North Hollywood, Calif. 91605

BOOKS, MAGAZINES

- American Modeler
1012 Fourteenth St. Washington, D.C. 20005
- Radio Control Models Magazine
13/35 Bridge Street, Hemel Hempstead
Herts, England
- Modelcraft Books
2304 Redondo Beach Blvd.
Gardena, Calif.
- "Know about Model R/C" book
Editors and Engineers, LTD.
New Augusta, Indiana



1/32 "PRO" CAR

It's easy to build, and very competitive!

Handling is *the* main consideration when building a competitive home track machine. The car shown here has proven to be a real "go for all the marbles" car, and has taken home its share of the hardware consistently.

The new Versitec motor is great for 1/32 cars. It is small in overall dimensions, and so robust it seems impossible that it could ever break! With the addition of the new rear axle bracket, recently released by Versitec, it's a natural for the small home car, in addition, of course, to being a literal "bomb" for 1/24 machinery!

This chassis works well with either the Super Sponge tires/wheels made by such companies as Rikken and AJ's, or the AJ Silicones. It's a rugged car too, and has survived several unscheduled trips into the "boonies."

This car, however, is not too

cheap! The Versitec motor accounts for the bulk of the shekles, and the Versitec rear ball bearings aren't being given away on the local street corners either! If you like, Oilite bearings could be substituted. The performance wouldn't be affected too much, although you'd lose the advantage in alignment that ball bearings give.

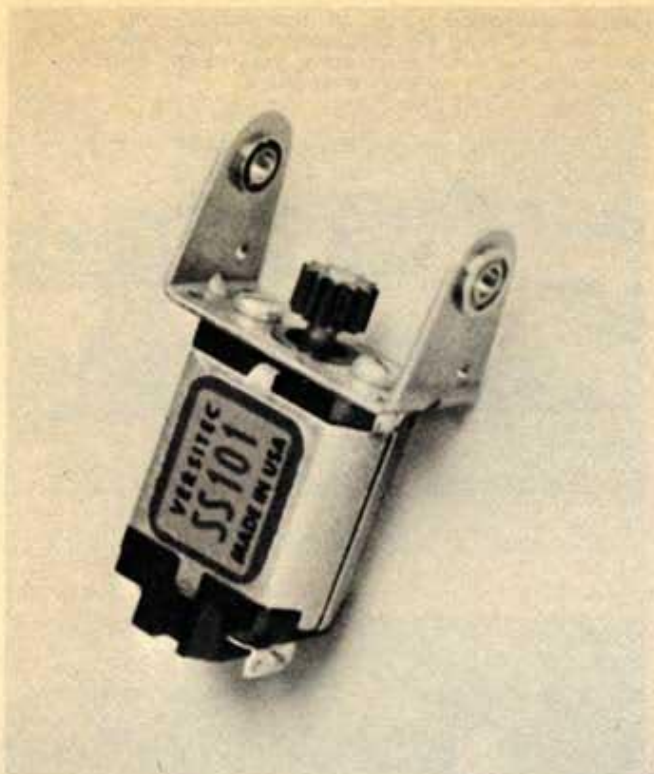
I chose a Select Innovations Elfin body, but any good 1/32 clear shell can be used. Just adjust the chassis wheelbase and tread accordingly.

The bill of materials is self explanatory, so go heat up that soldering iron!

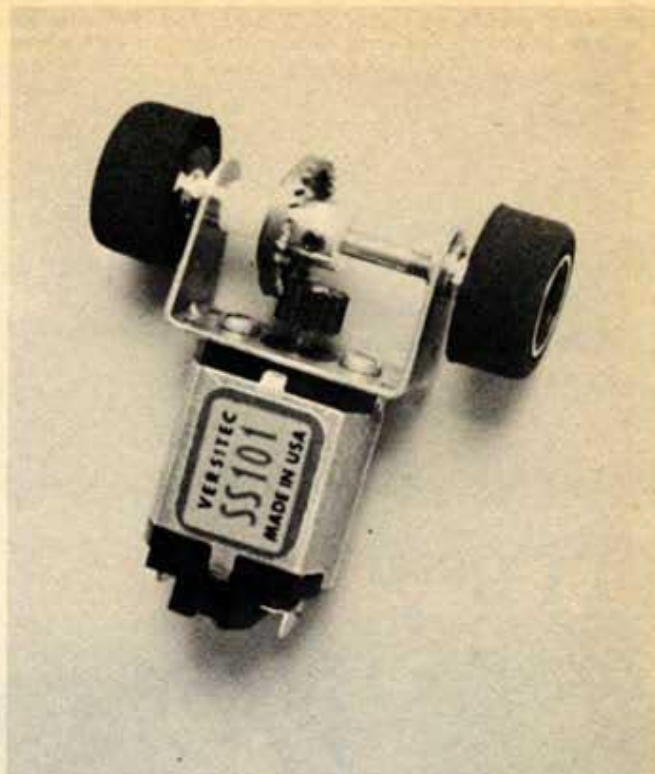
BILL OF MATERIALS

- 2 ea. BuzCo Axles
@ .39¢ each
- 1 pr. Cox Superflex motor wires
- 1 ea. Versitec 10 tooth pinion

- 1 ea. Versitec SS-101 bracket
- 1 ea. Versitec SS-101 motor
- 1 pr. Versitec 1/8" ball bearings
- 1 ea. Select Innovations Elfin 1/32 scale body
- 2 pr. Cox jam nuts
@ .10 pr.
- 1 ea. Cox 27 tooth crown gear
- 1 pr. Rikken Riverside rear tires and wheels
- 1 pr. Rikken 1/32 front wheels and tires
- 1 ea. 12" piece of 1/16" K&S tubing (for body mounts)
- 2 ea. 12" pieces of 1/16" K&S solid rod (for chassis stringers)
- 1 ea. 12" piece of 5/32" O.D. K&S tubing (for front axle tube) and guide shoe upright.
- 1 ea. Dynamic 1/8" shank quick-change guide.

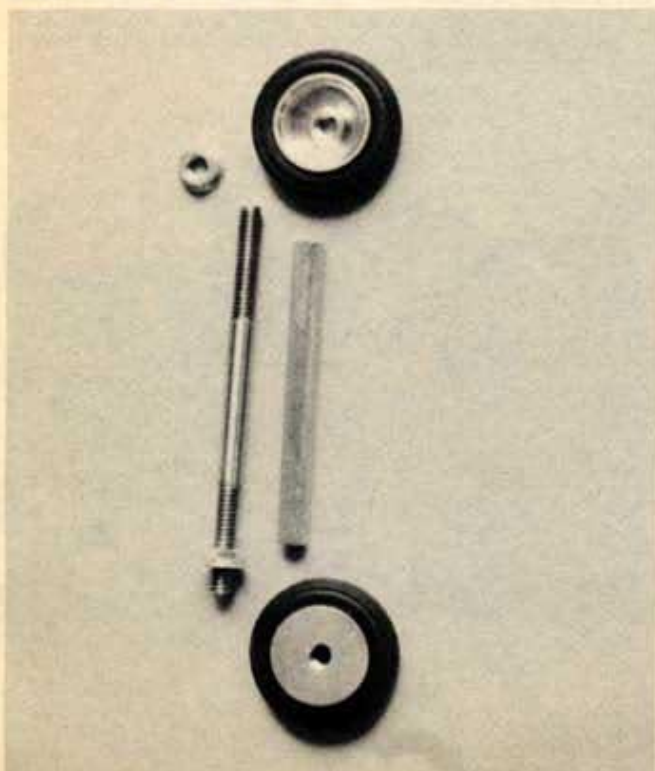


Solder the pinion to the shaft. Then polish the Versitec bracket with steel wool, and mount to the motor with the self-tapping screws supplied. Install the ball bearings with loctite.

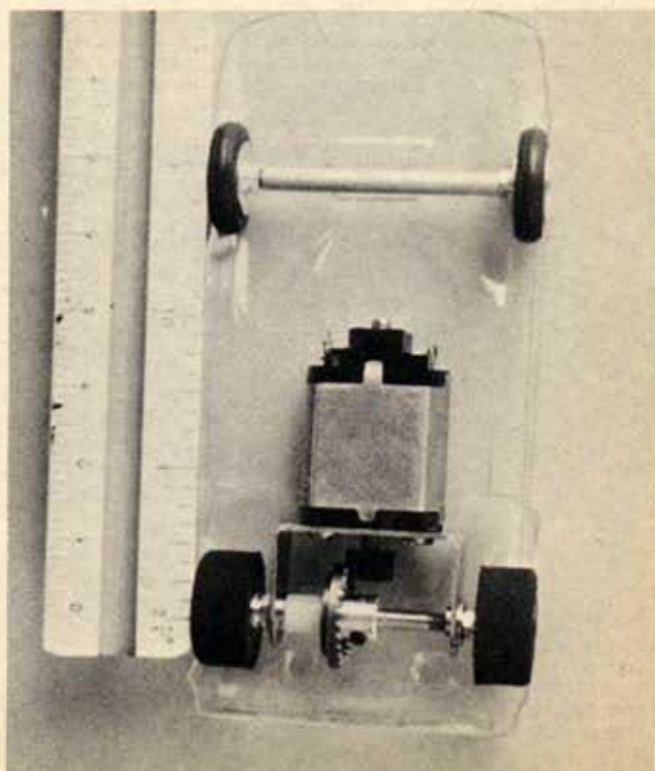


Temporarily install the BuzCo 2" axle, 27 tooth Cox crown, Cox jam nuts, and Rigger wheels, for a trial fit. Note the use of the plastic spacer between the gear and bracket, to reduce gear side slop.

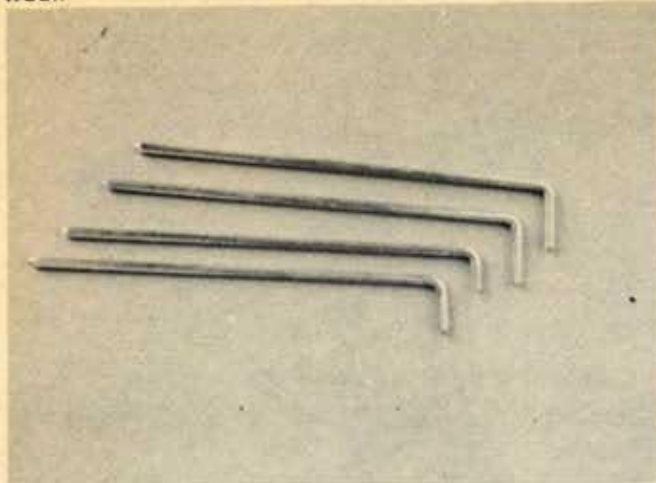
Cut a piece of 5/32" O.D. tubing for the front axle tube. Polish with steel wool.



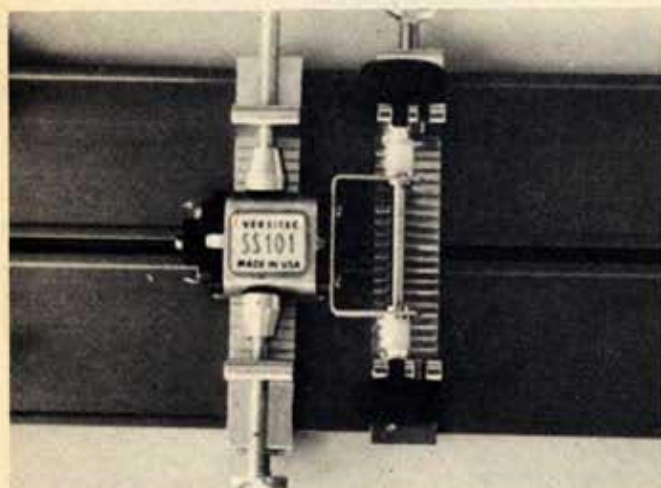
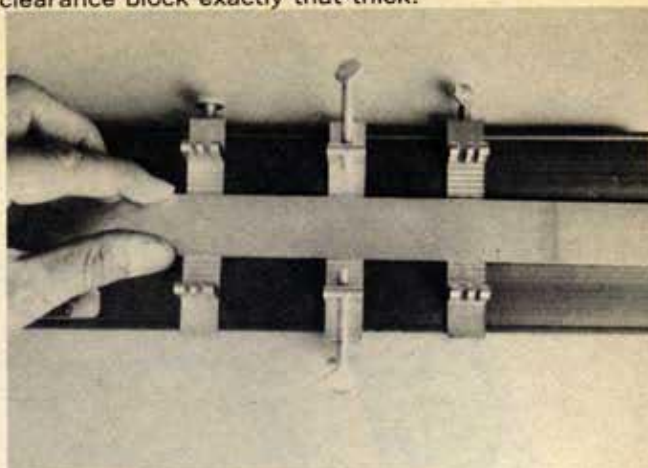
Assemble the front axle assembly, and lay the entire assembly in the body shell, for a fitting. Measure the wheelbase.



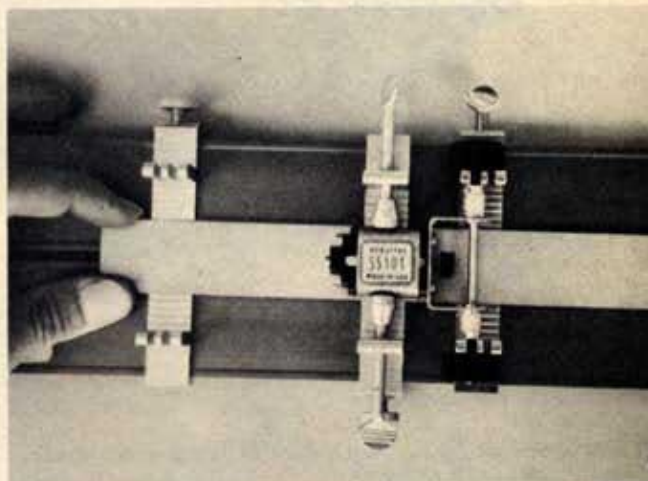
Cut four pieces of 1/16" O.D. solid rod. Form a 90 degree angle on the end, as shown. Polish with steel wool.



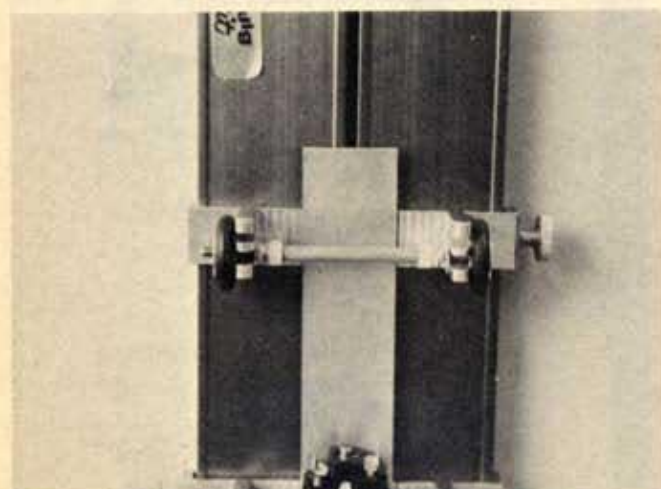
Lay a clearance strip on the Adjusto-Jig. 1/16" clearance should be sufficient for most tracks. You decide how much clearance you need, and use a clearance block exactly that thick.



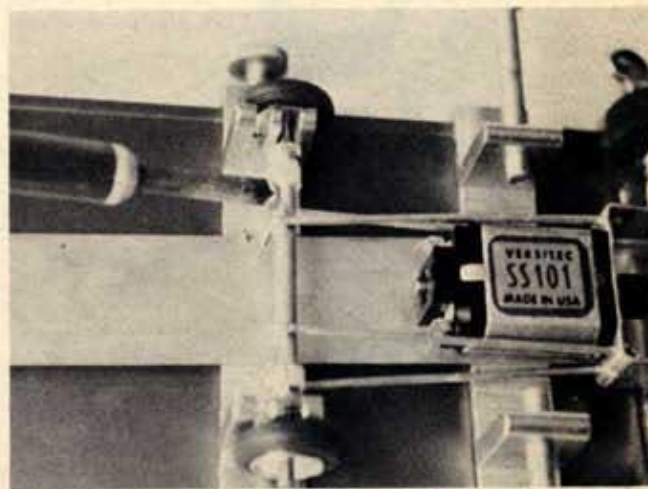
Replace the regular axles with long ones. The jig won't accept the shorter axles. Using spacers and jam nuts, adjust the motor/bracket assembly so the armature shaft is centered over the long slot in the



jig. Note that the clearance shim was removed for this operation. Slide it back in now, and snug down the clamps holding the motor.



Drop the front axle assembly in the jig (you must use a long axle here too) and use plastic spacers and jam nuts to hold it snugly, with both front tires resting firmly against the deck. Set the wheelbase to the correct dimension and tighten the clamps. Make sure the wheelbase is same on the left and right sides of the chassis.

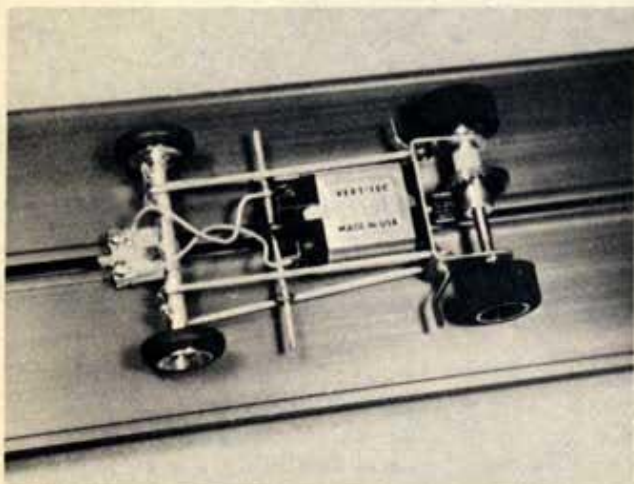
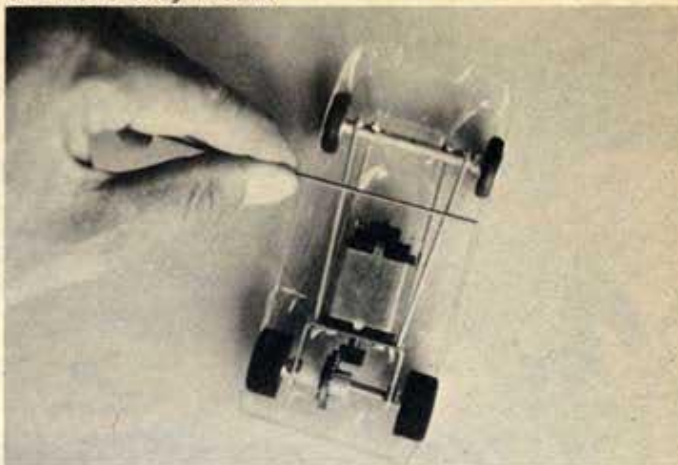


Slide the four tubes with the 90 degree bend in them, through the holes in the rear bracket. The 90 degree bends should rest against the front axle tube, the two bottom tubes in front of the axle tube, and the two top tubes behind it. Solder. You'll note that the motor clamp had to be 'backed off' to allow the top tubes to be installed.

Remove the chassis from the jig. Install the regular axles, gears, spacers, and wheels.



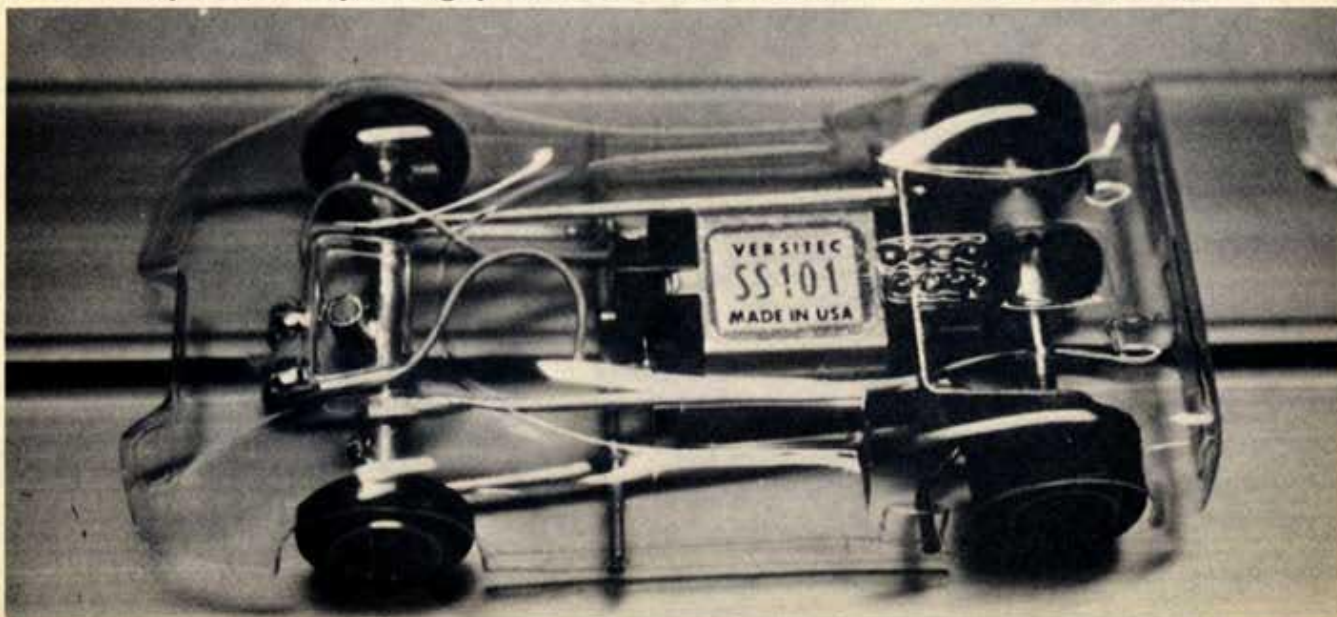
Using 1/16" O.D. tubing, measure across the body shell, with the chassis in position shown. Cut the tubing, and solder to the chassis tubes. This forms the front body mount.



Cut two short pieces of 1/16" O.D. tubing form as shown, and slide them into the holes on the side of the gear bracket. Solder. These form the rear body mount. Solder a 5/32" O.D. piece of tubing to the front axle tube, and install the guide shoe. Solder motor wires to the motor lugs, and secure them to the pickup shoe.

Install the body for the final fitting. Bend straight pins slightly, and pierce the body, sliding them into the tubing. Trim the wheel wells if necessary, to provide wheel clearance. Wash the body shell, and dry thoroughly. Paint care-

fully. Install strips of fibreglas reinforced Scotch tape (available in nearly any paint or hardware store) along the bottom of the body shell, for reinforcement. Detail the body with a small brush, and reinstall on the chassis. You're ready to go!



PRO PLATE CHASSIS



A close look at the MC&S Team Cars

By Chris Chan

The latest hot frame to hit the California area is the brass plate set-up. The all-but-new concept of using strips of .025" or .032" brass to build a handling chassis has really caught on.

Reaching into the back pages of MCS's first issues you can find these types of chassis. It would seem that the development of frames has made one full revolution in its ever-changing state.

Take a look at the hot racer's car at any pro event and you'll find better than 50% have strayed away from the traditional brass rod. Why are the pans and plates coming back? Do they actually handle better than the proven brass rod frames?

The MCS racing team looked for and got the answers the only way, by trying and experimenting with the various types of current plate chassis, and creating new concepts of our own.

The basis of the design of the plate frame is to get the weight down lower and also get more of it. With more home rewinders and factories producing "rocket" motors with the latest super magnets, there just has to be a heavier frame to keep it down to earth. After all, gravity can't do *everything* by itself!

The tree-stump pulling power of Arco 33's and the New Mura Magnums give the rewriter the ability to wind radically. The extra ballast of the plate chassis is hardly noticed and the additional weight is put to good use in more positive cornering too.

With K&S brass strips you have just the answer. Taking 1/4" .032" x 12" strip of flat brass, you end up with the same width as four pieces of 1/16" rod with approximately the same weight and a much lower center of gravity. But brass strips as a chassis component also offer a few other advantages such as a better (flat) soldering surface and usually a neater finished product. Chassis strength, struc-

tural flexibility, and lack of track-to-track interchangeability are sacrificed, though. By structural flexibility I'm referring to the fact that a brass rod chassis gives you upwards of six rods per side to solder wherever it is desired. In this form of construction you can minutely control flex and strength. But despite these drawbacks the plate frame sets you up with a handling combination which is darn near unbeatable.

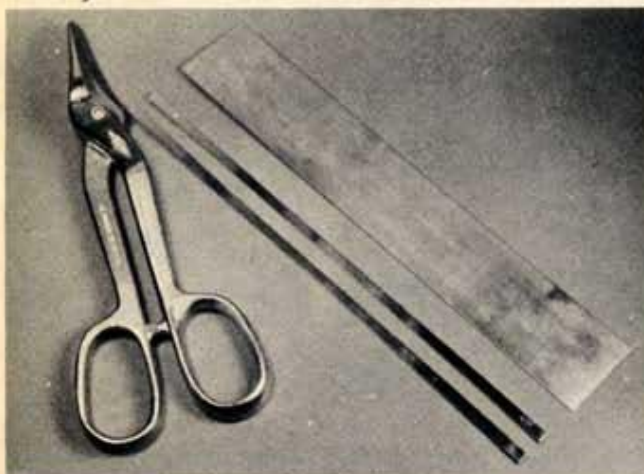
By following the steps indicated by the photos and captions, you can build yourself a handling 1:24 commercial track rocket for very little cash. The frame I constructed is an excellent all-purpose plate frame that will work well on a wide variety of different tracks. In addition, a few photos of some more specialized frames were included to help you with experimentation.

With your completed frame and its slight variations (such as more weight, or less flex for personal preference) you should



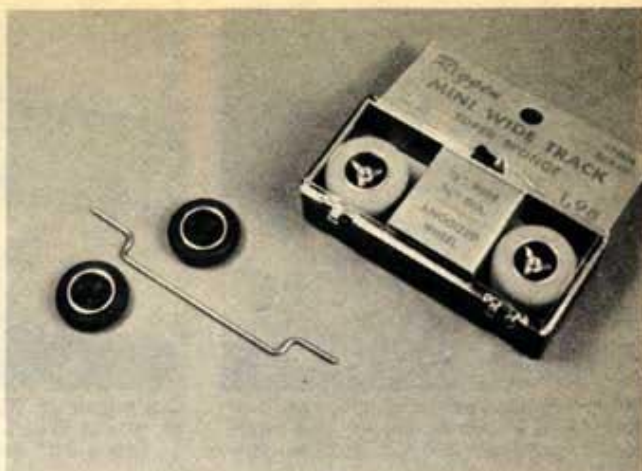
A good lightweight shell like Dynamic's or Ruskit's can help you cut off time all over the track.

K&S makes brass strips in .025" and .032" in $\frac{1}{4}$ " and $\frac{1}{2}$ " widths, but a tin snips can cut just the width you want.



have a look at some other performance features before finishing up the job. Use a lightweight body and a motor with a set of "hot" magnets. The thinner plastic (butyrate) shells of Dynamic and Ruskit, which are altered to handle and perform better, will definitely add extra speed to your pro-styled frame. The lighter, lower, and wider bodies can cut extra tenths off your lap time. Rechargeable Champion Arco 33's with shim, and the latest Mura Magnums, coupled with 45-55 turns of #27 to #28 wire should provide plenty of punch to haul the extra weight easily.

The finished plate frame is a carbon copy of the typical pro frame and handles like a dream. It just may be the answer you are looking for to get your car into the winner's circle today!

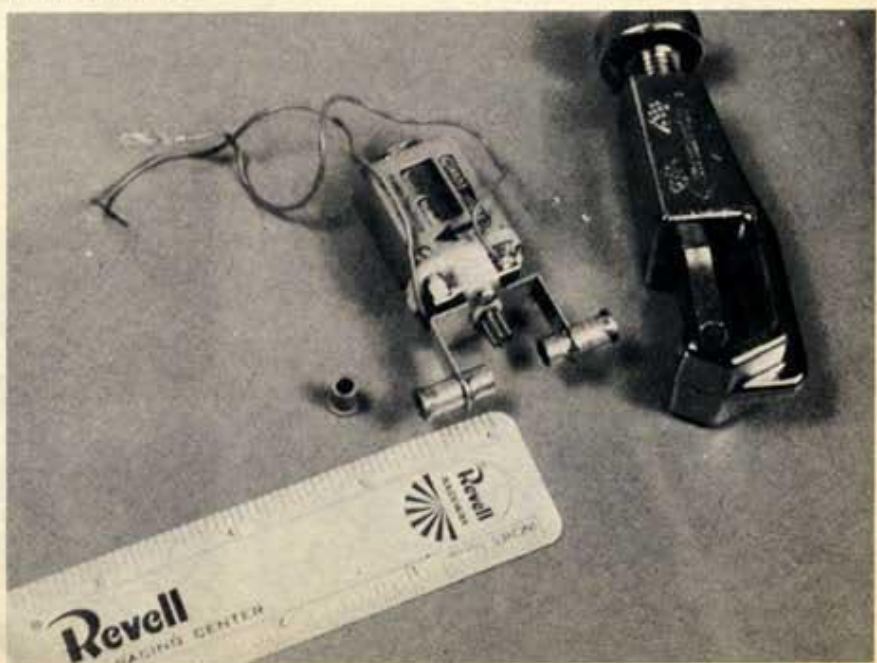


Wheels and tires on the pro plate are Rigger's great new "Minis." They are a really "sano" handling combo.

The axle holes of the Ruskit #795 bracket are enlarged to fit $\frac{7}{32}$ " tubing.



$\frac{1}{2}$ " lengths of $\frac{7}{32}$ " tubing are then inserted with $\frac{3}{16}$ " Dynamic oilite bearings.

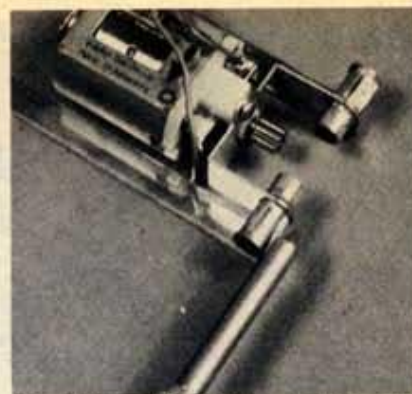




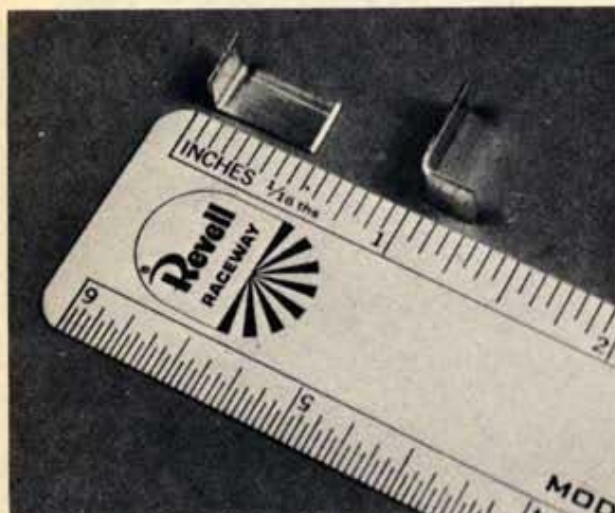
With the tires set at 3" and the Cox jam nuts in place, solder the axle-bearing tubes as far out as you can.



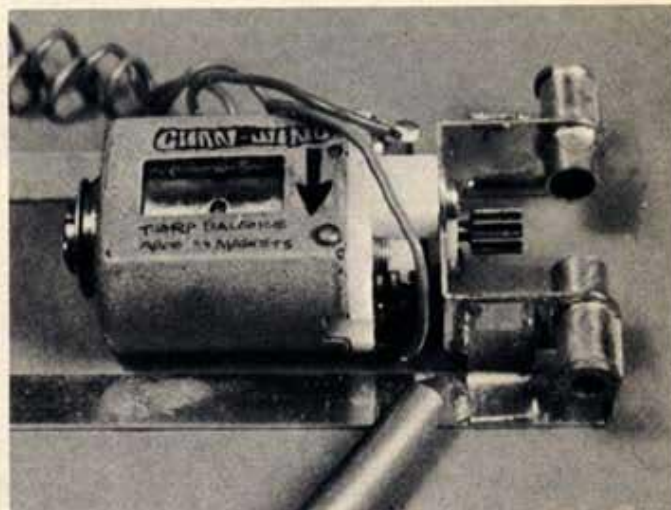
Cut a pair of .025" $\frac{1}{4}$ " brass strips at about $5\frac{3}{4}$ " and bend the last $\frac{1}{2}$ " to a 90° angle.



Carefully solder them to the two bearing tubes, keeping them parallel to the can.

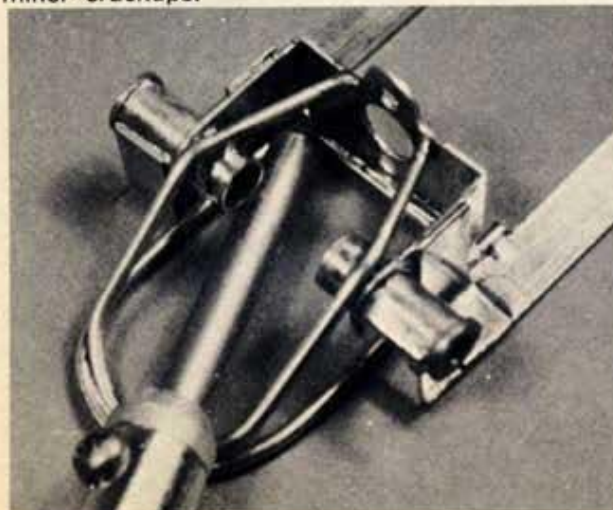


Fashion up two $\frac{1}{2}$ " x $\frac{1}{4}$ " "L" brackets for braces.

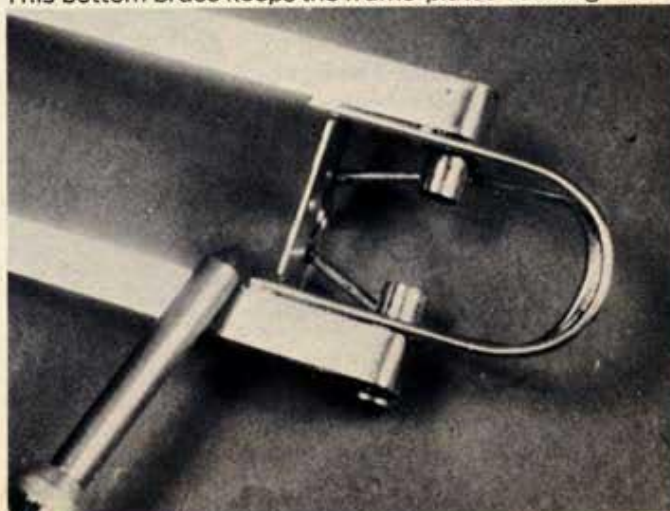


Solder the braces in place against the bracket and the frame rails.

The Russkit bracket isn't too strong so rear braces are required, to prevent bending under minor crackups.

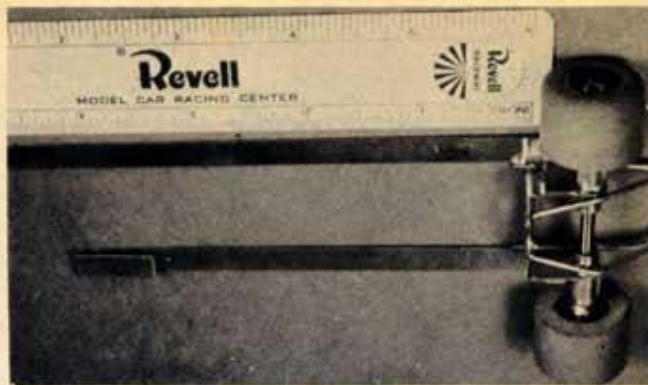


This bottom brace keeps the frame plates running true.



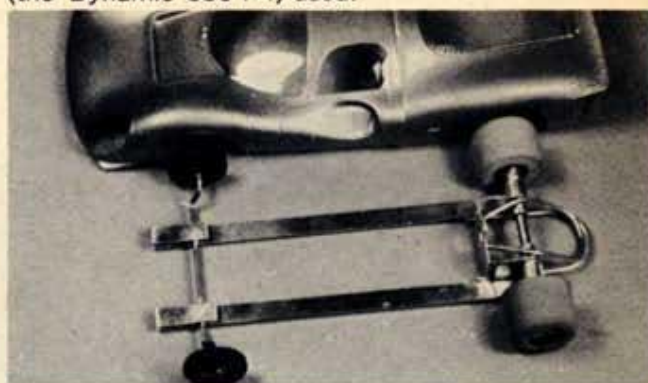
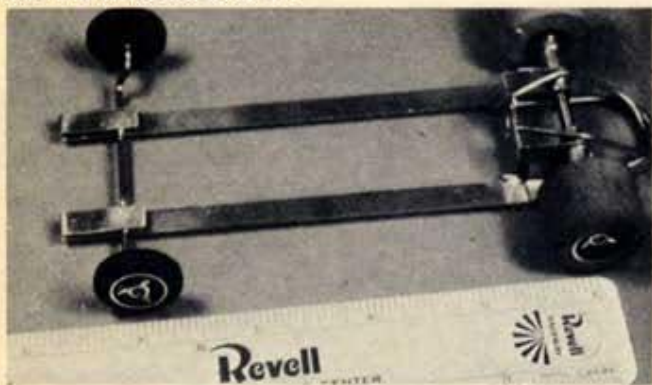


Assemble the Rigger front end to 3" limit.

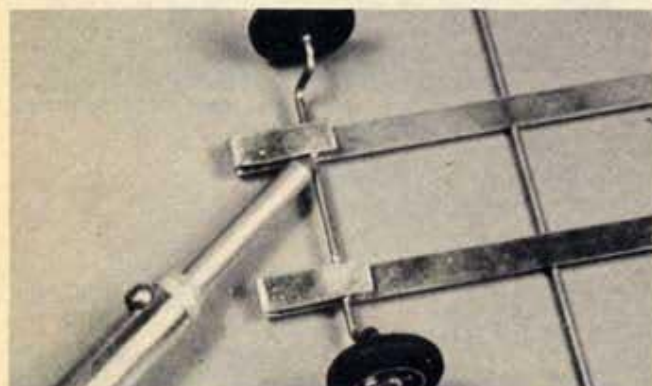


Double back the front $\frac{3}{4}$ " of the plates.

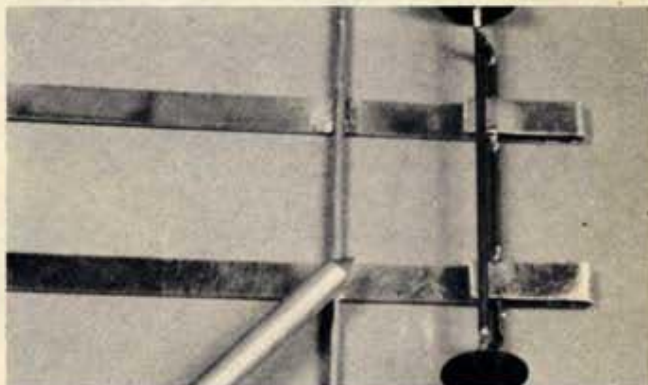
Set the wheelbase to 4".



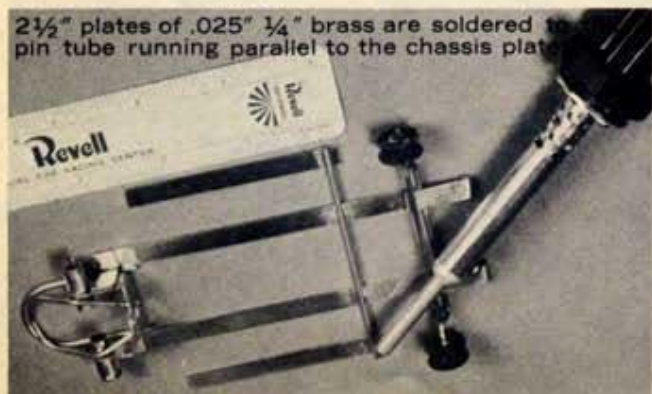
Check to see that the wheelbase matches the body (the Dynamic 330 P4) used.



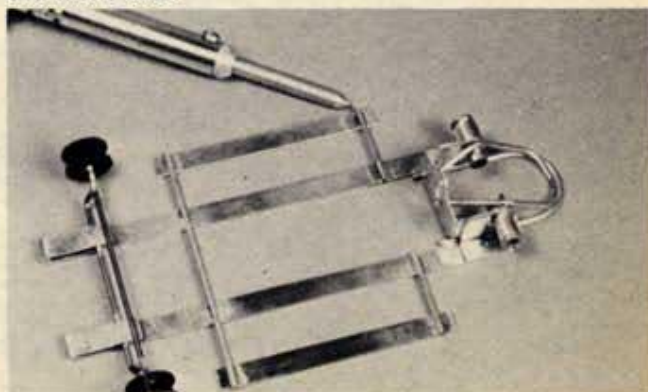
A $\frac{1}{16}$ " tube is used for clearance and the frame is soldered to the front axle.



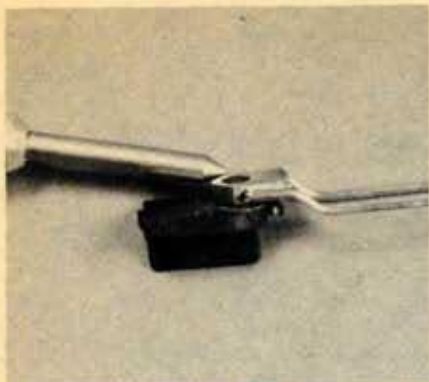
With the body as a guide, a length of pin tubing is cut and soldered to the frame about an inch behind the front axle.



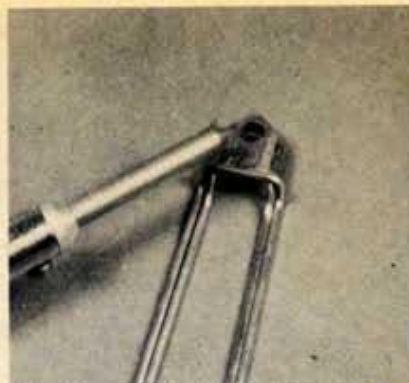
$2\frac{1}{2}$ " plates of .025" $\frac{1}{4}$ " brass are soldered to pin tube running parallel to the chassis plate.



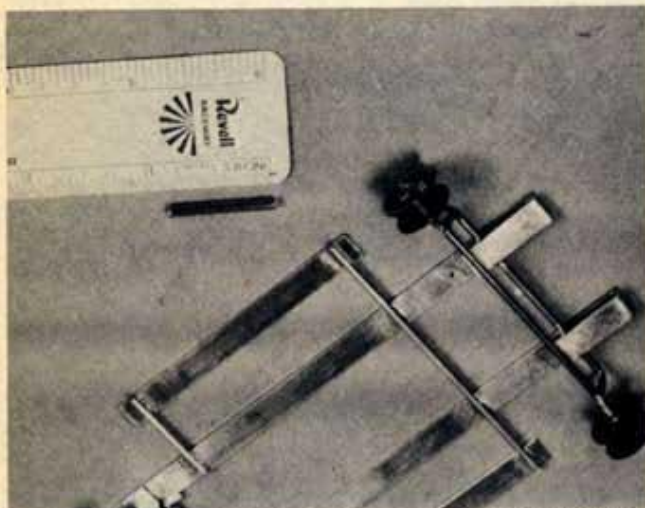
Now the rear pin tube mounts are soldered in position.



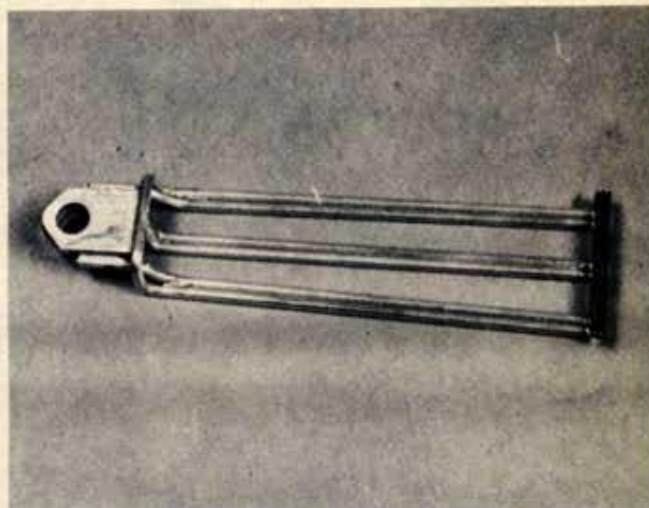
The Cox guide in the Dynamic pillow block is set to the proper height by bending the rods to set flush with the track running surface.



Another rod is shaped to fit over the first two and soldered in place.

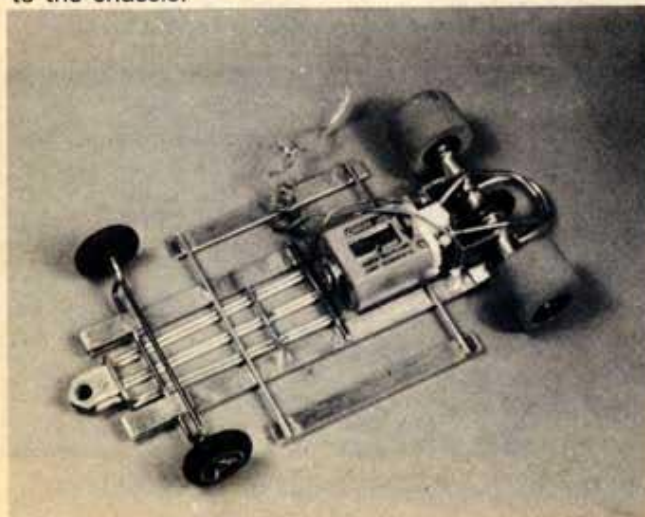


The drop-arm pivot tube is cut from $3/32$ " K&S nickel plated tubing to $7/8$ ".



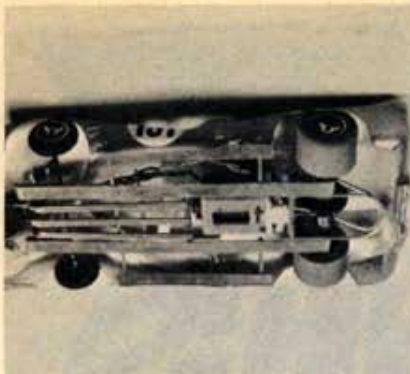
Soldered to the arm now are the two additional rod braces and the pivot tube.

The arm is held in place by a rod through the pivot tube in two other $3/32$ " pieces of tubing, soldered to the chassis.

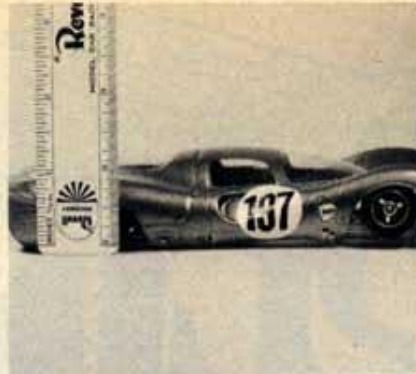


Using straight pins to hold the low and mean Ferrari 330 P4 (Dynamic, in place, the plate frame is ready for the track, and testing.

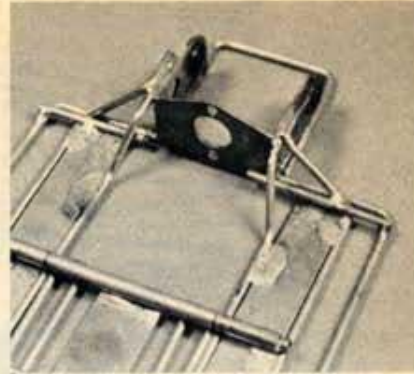




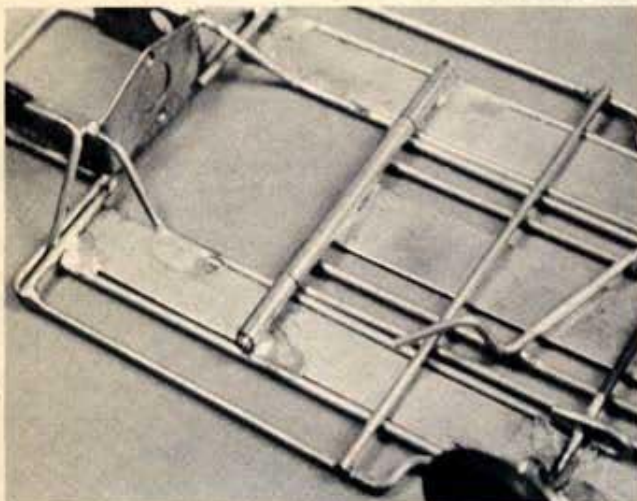
All of the solder is out of sight, no matter how bad of a job you did. It makes a really sano job.



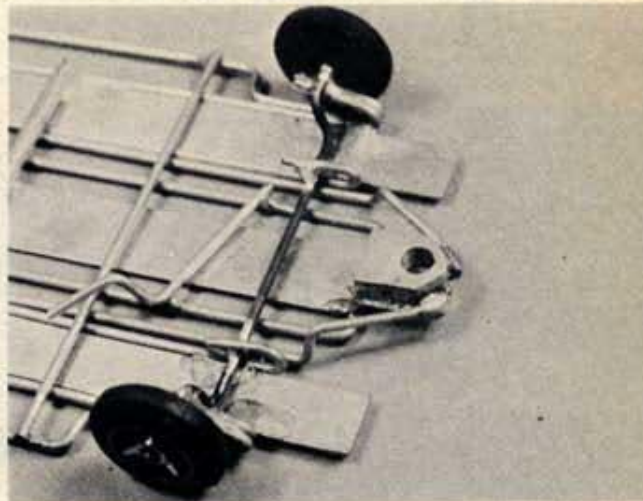
The red Ferrari coupe sits low, and the brass plate frame has such a low c.g. It handles fantastically!



This U-Go bracketed 26D plate frame uses well-braced .032" brass plate. Rod is used to eliminate flex and add strength.

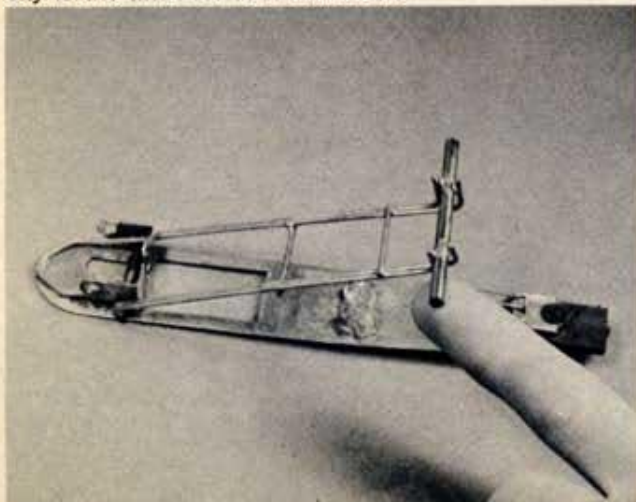


To eliminate pickup arm slop, $\frac{3}{32}$ " and $\frac{1}{8}$ " tubing are used in the pivot.

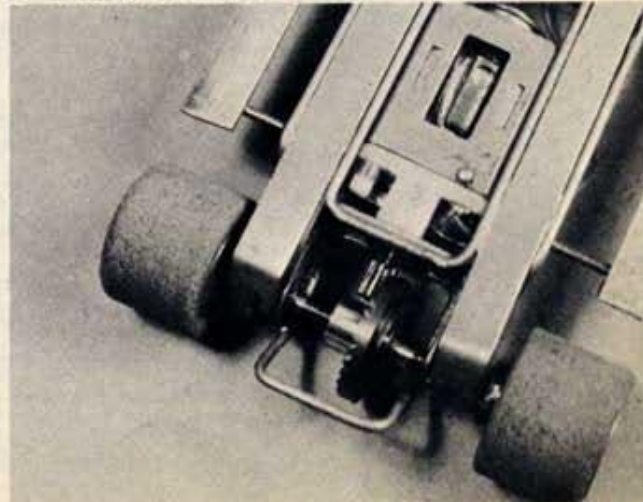


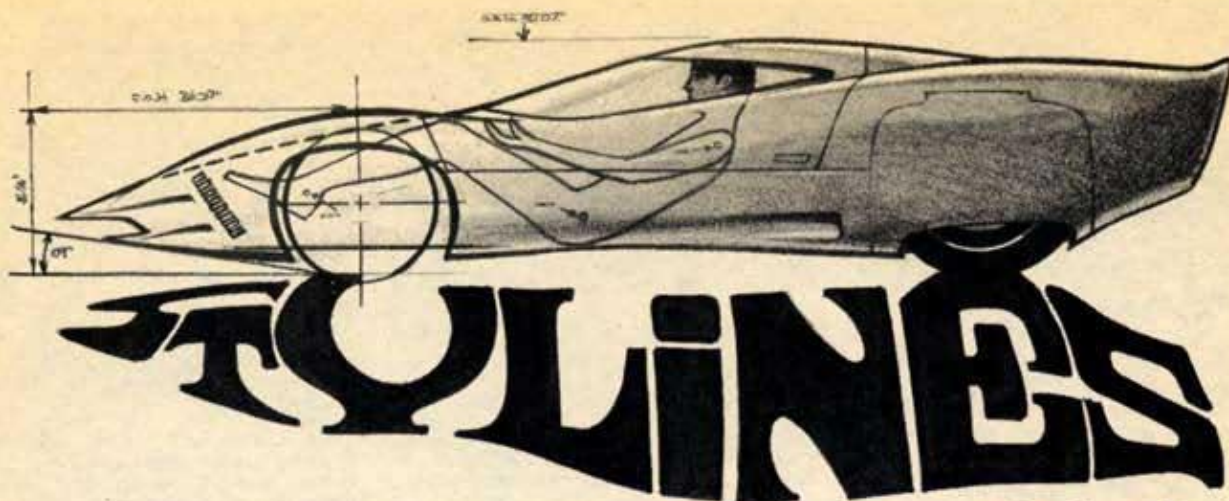
As in the chassis, the drop arm is a product of both plate and rod.

This "Iso-Plate" is a Cucharacha-like frame for a formula car that really turns on in the turns. The sky is the limit for new creations.



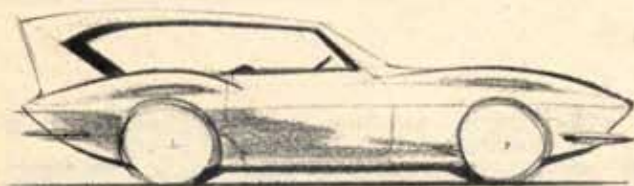
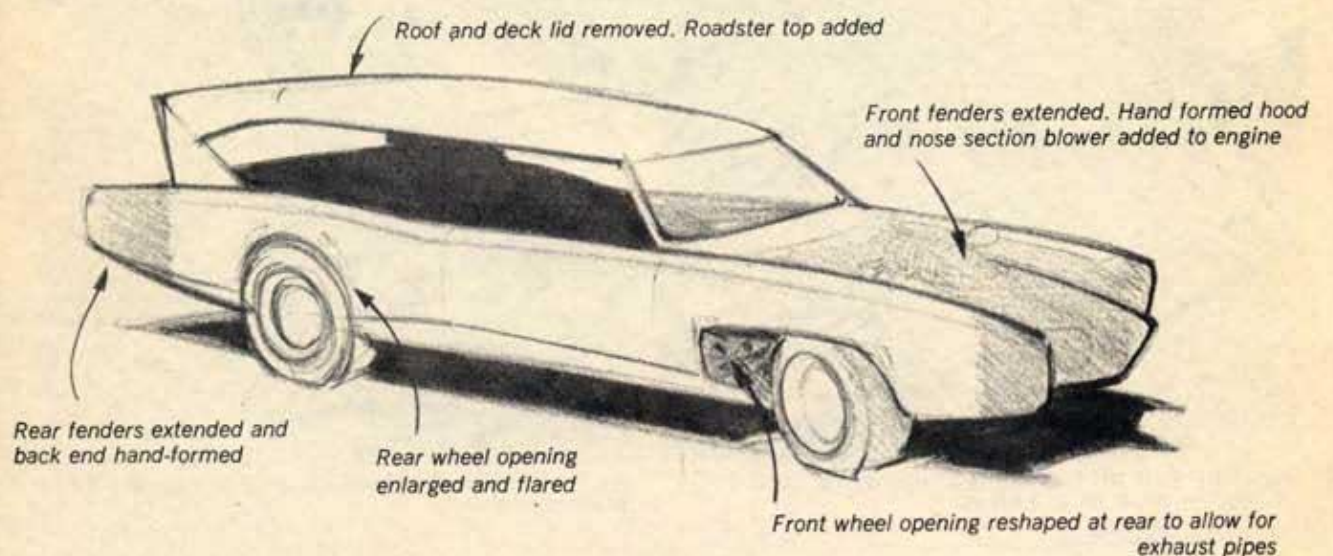
Our Enduro Machine shows off some odd forms of bracing to keep the bracket in line.



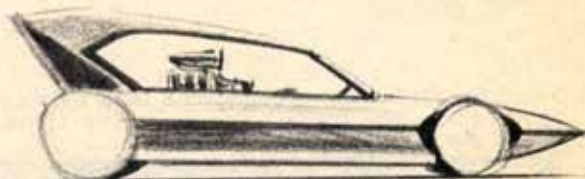


FOULINES

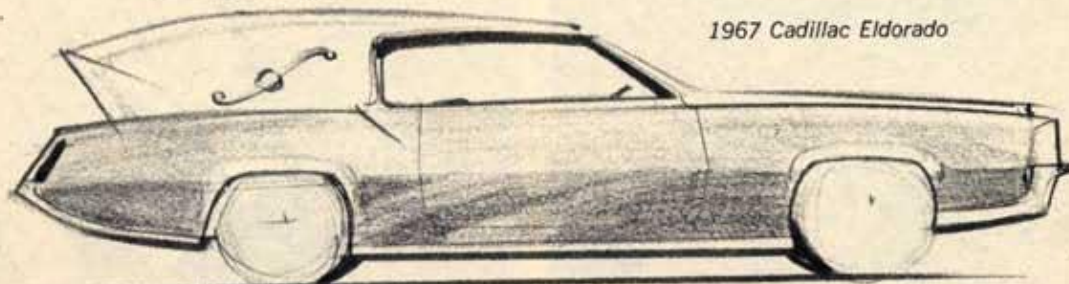
The most commonly asked questions are answered in this new feature each month. **By Harry Bradley**
 What better way to get an answer to your question than with a personalized drawing?
 This new monthly feature shows you the answer to your question.



1963-1967 Stingray

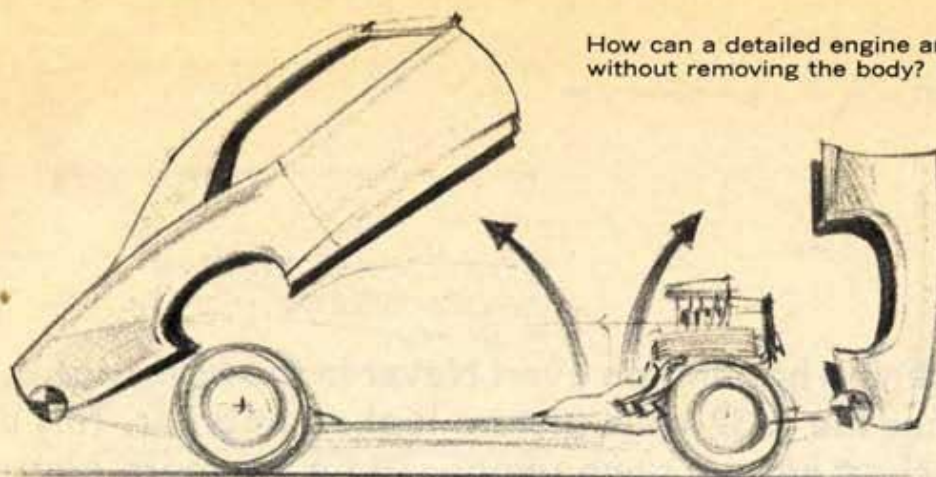


Piranha



1967 Cadillac Eldorado

How did Jeffries turn a GTO into a Monkeemobile? Most of the body alterations can be found at the front and rear only. The exposed engine and wild top add to the overall effect. Could the Monkeemobile top be used on other cars? The effect can really work on all body styles. Simple modifications on some applications (Eldorado) make exciting designs.



How can a detailed engine and chassis be displayed without removing the body? Pivot the front fender and hood forward, and the rest of the body rearward. Hood should be cemented to fenders for rigidity, also doors to body.

Front end basically stock except for slim grill.
Note solid front axle.



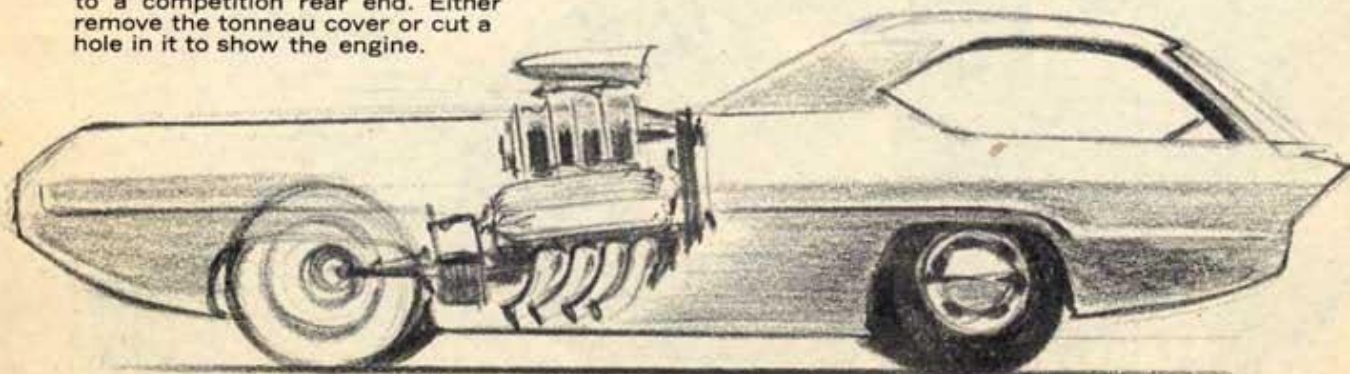
1957 Chevrolet/Street funny car

Entire body jacked up.
Mild customizing throughout

Is there a way to make a competition '57 Chevy look good without much work? Make the "funny car" look neat by styling a stine front end, that shows off the unusual front axle and suspension.

Deora custom truck and rear mounted Piranha engine

How could a big blown V-8 be put into the Deora?
Many kits offer hairy engines and transmissions hooked directly to a competition rear end. Either remove the tonneau cover or cut a hole in it to show the engine.



The home racing scene is hotter than ever! Never in the history of U. S. model car racing has the 1/32 scale picture looked brighter. This up-swung on the sales chart has not gone unnoticed by the more aggressive home set manufacturers. New sets and accessories appear daily, which should leave **you** grinning from ear to ear! The sets shown are not in any order of preference. All are excellent (or they wouldn't have made this scene!) so you can't make a wrong choice, quality-wise. Just pick the one that suits your needs, and go get one.

THE BEST IN HOME

Specifications

Overall Dimensions 6'2" x 2'7"
 1 each 1/24 scale American Roadster
 1 each 1/24 scale Cheetah Car
 2 each Controllers with dynamic brakes
 1 each U.L. Approved Power Pack
 8 each 60" Curved Track—1/24 scale
 5 each Straight Track—1/24 scale

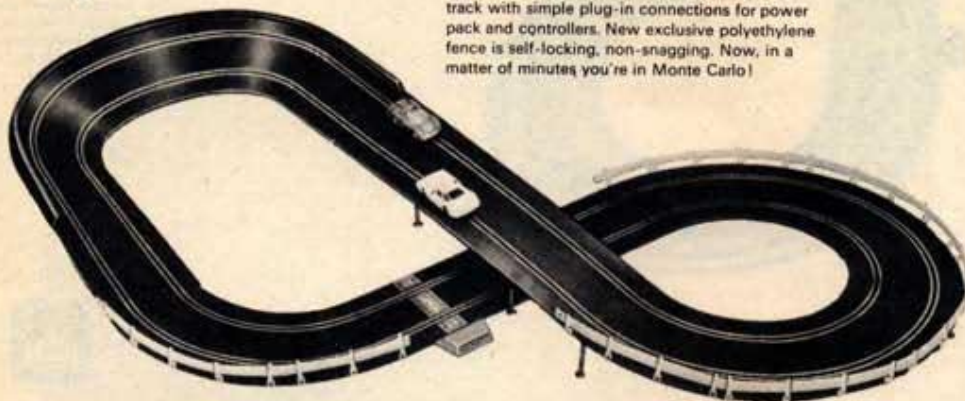
1 each Starting Track with plug-in Terminals
 8 each Fence Sections
 Overpass Supports
 Connector Wires and Locking Lugs
 Strombecker Warranty
 Strombecker Maintenance and Racing Manual

New 14 foot lightning Le Mans 1/24 scale set brings challenging slot-racing right into the home! Competing on this great figure 8 layout is the 1/24 scale champion American Roadster and the charging Cheetah. These racing machines have high-impact authentically detailed bodies, powerful 12 volt tin-can type motors, precision-built metal chassis, machined aluminum wheels and super-soft tires.

The 1/24 scale track is high-impact, tough polystyrene which assembles quickly and joins tightly assuring good, constant electrical connections. Channel-rail lanes are 4 1/4" apart and are strongly secured to give long track life. There's also the easiest-to-operate starting track with simple plug-in connections for power pack and controllers. New polyethylene fence is self-locking, non-snagging. There's no limit to the Le Mans as you race on and on!



Le Mans Classic Racing Set No. 6800



Monte Carlo Rallye Racing Set No. 6840

Specifications*

Overall Dimensions 8'10" x 6'10"
 1 each 1/24 scale Ford J Car
 1 each 1/24 scale Ferrari P-2 Car
 2 each Controllers with
 Dynamic Brakes
 1 each U.L. Approved Power Pack
 8 each 45° Curved Track—1/24
 scale
 8 each Straight Track—1/24 scale
 1 each Starting Track with
 Plug-in Terminals
 1 each Monza Wall (4—45°
 curves, 2 spin-out aprons,
 4 fence sections)
 8 each Fence Sections
 Overpass Supports
 Connector Wires and Locking
 Lugs
 Strombecker Warranty
 Strombecker Maintenance and
 Racing Manual

This all new Strombecker 1/24 scale set brings all the thrills of competition racing right into the home! The Monte Carlo Rallye offers 22 feet of continuous excitement including a challenging, 30° banked Monza wall plus 10 feet of straightaway track to allow the 1/24 scale Ford J and Ferrari P-2 to fight it out to a cliff-hanging climax! Highly detailed cars have rugged tin-can type 12 volt motors, precision-built metal chassis, machined aluminum wheels and track-grabbing tires.

The 1/24 scale track is high-impact, tough polystyrene which assembles quickly and joins tightly assuring good, constant electrical connections. Channel-rail lanes are 4 1/4" apart and are strongly secured to give long track life. There's also the easiest-to-operate starting track with simple plug-in connections for power pack and controllers. New exclusive polyethylene fence is self-locking, non-snagging. Now, in a matter of minutes you're in Monte Carlo!



RACING SETS

Specifications

Overall Dimensions 17'2" x 3'10"
 1 each 1/24 scale Porsche Carrera 6
 1 each 1/24 scale Lotus 30
 2 each Pro-controllers with dynamic
 brakes
 1 each U.L. Approved Power Pack
 4 each 45° Curved Track—1/24 scale
 23 each Straight Track—1/24 scale
 1 each Starting Track with Plug-in
 Terminals
 2 each Monza Walls with spin-out aprons
 (8—45° curves, 4 aprons, 8 fence)
 4 each Fence Sections
 Overpass Supports
 Connector Wires and Locking Lugs
 Strombecker Warranty
 Strombecker Maintenance and Racing
 Manual

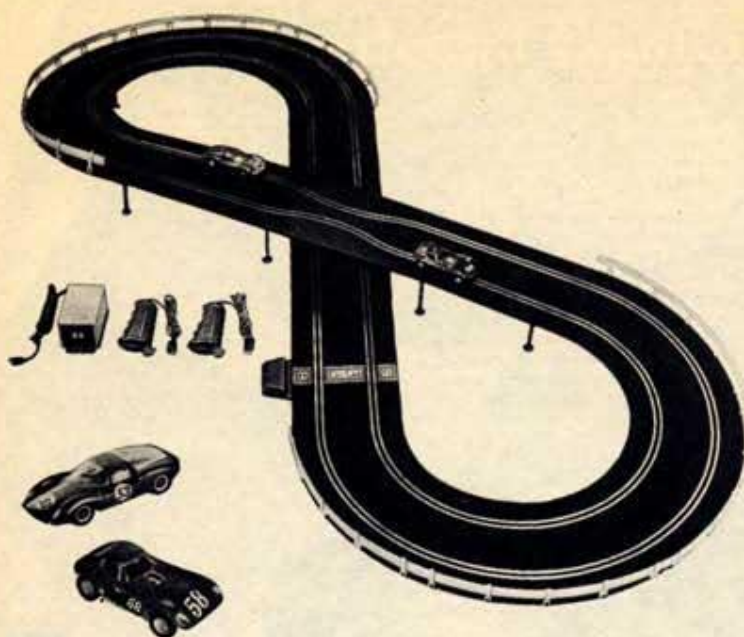
Strombecker Monza Marathon now introduces commercial-type racing to the home! Here's 36 feet of fast track featuring two exciting, 30° banked Monza walls and 24 feet of straightaway track to let the 1/24 scale Porsche Carrera 6 and Lotus 30 fight it out to a screaming climax! Cars have highly-detailed bodies, precision-engineered metal chassis with new, machined aluminum wheels, 12 volt tin-can type motors and super-soft tires.

The 1/24 scale track is high-impact, tough polystyrene which assembles quickly and joins tightly assuring good, constant electrical connections. Channel-rail lanes are 4 1/4" apart and are strongly secured to give long track life. There's also the easiest-to-operate starting track with simple plug-in connections for power pack and controllers. New exclusive polyethylene fence is self-locking, non-snagging. Mighty Monza Marathon, the newest in



Monza Marathon Racing Set No. 6880





Specifications

Overall Dimensions
6'1" x 2'4"
1 each 1/32 scale Cheetah Car
1 each 1/32 scale Dino Ferrari Car
2 each Controllers with Dynamic Brakes
1 each U.L. Approved Power Pack
8 each Curved Track
4 each Straight Track
1 each Chicane Obstacle Track
1 each Starting track with Plug-In Terminals
8 each Fence Sections
Overpass Supports
Connector Wires & Locking Lugs
Strombecker Warranty
Strombecker Maintenance and Racing Manual
\$30.00

See America first! Do it with the charging Cheetah and the dynamic Dino Ferrari. Watch carefully as they fight it out on this great 14 foot Road America layout. Cars equipped with powerful 12 volt tin-can type motors, metal chassis with independent rotation of front wheels for real control in navigating corners. Cars also have new, machined all aluminum wheels, soft tires and high-impact, authentically detailed bodies. There's also a new high-quality easy-to-operate starting track with simple plug-in connections for power pack and controllers. Exclusive, self-locking polyethylene fence will not snag cars. Slide, glide, ride Road America!

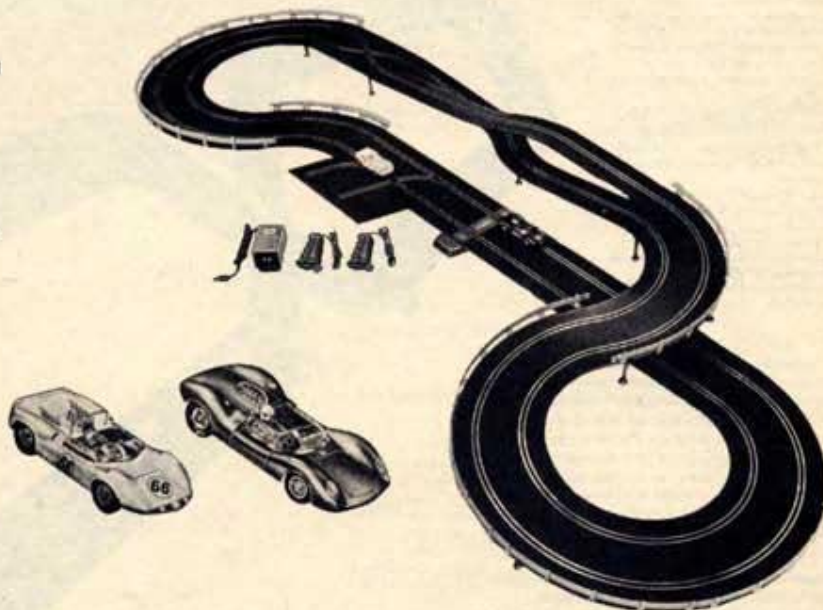


Road America Racing Set No. 9803

This challenging Sebring has 20 feet of fast track that pits the champion American Roadster against the lashing Lotus! There's also the unique, exciting over/under track, lane changer and Le Mans start. Then, you have the highest-quality, easiest-to-operate starting track with simple plug-in connections for power pack and controllers. Cars have powerful 12 volt tin-can type motors, metal chassis with independent rotation of front wheels for real control in navigating corners. Cars also have new, machined all aluminum wheels, soft tires and high-impact, authentically detailed bodies. Exclusive, self-locking, non-snagging polyethylene fence. Racing's the thing when you swing with Sebring!

Specifications

Overall Dimensions 7' 10" x 3' 2"
1 each 1/32 scale American Roadster
1 each 1/32 scale Lotus 30 Car
2 each Controllers with dynamic brakes
1 each U.L. approved power pack
12 each Curved Track
2 each Straight Track
1 each Starting Track with Plug-in Terminals
1 each Le Mans Start
1 each Lane Changer
1 set Over and Under Tracks (3 sections)
12 each Fence Sections
Overpass Supports
Connector Wires & Locking Lugs
Strombecker Warranty
Strombecker Maintenance and Racing Manual
\$40.00

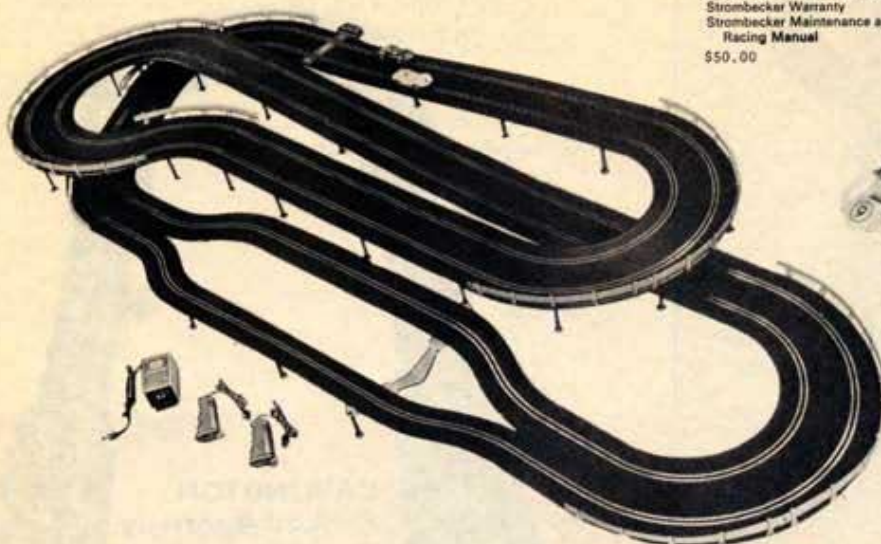


Sebring Racing Set No. 9804

Now, endless excitement on this 33 foot rugged raceway which converts into numerous layouts to suit the tastes of all racing buffs! Unique Monza split-track triples the thrills. The Monaco includes a 1/32 scale torrid Ford J and a 1/32 scale champion American GT Coupe. They churn, turn, burn the road! Cars equipped with powerful 12 volt tin-can type motors, metal chassis with independent rotation of front wheels for real control in navigating corners. Also featured are machined all aluminum wheels, soft tires and high-impact, authentically detailed bodies. This set has the highest-quality, easiest-to-operate starting track with simple plug-in connections for power pack and controllers. Exclusive, self-locking, non-snagging polyethylene fence. You really move with Monaco!

Specifications

Overall Dimensions 8' 4" x 3' 6"
 1 each 1/32 scale American GT Coupe
 1 each 1/32 scale Ford J Car
 2 each Controllers with Dynamic Brakes
 1 each U.L. Approved Power Pack
 14 each Curved Track
 13 each Straight Track
 1 each Starting Track with Plug-In Terminals
 1 set Monza Split Track (5 sections)
 14 each Fence Sections
 Overpass Supports
 Connector Wires and Locking Lugs
 Strombecker Warranty
 Strombecker Maintenance and Racing Manual
 \$50.00



Monaco Racing Set No. 9805

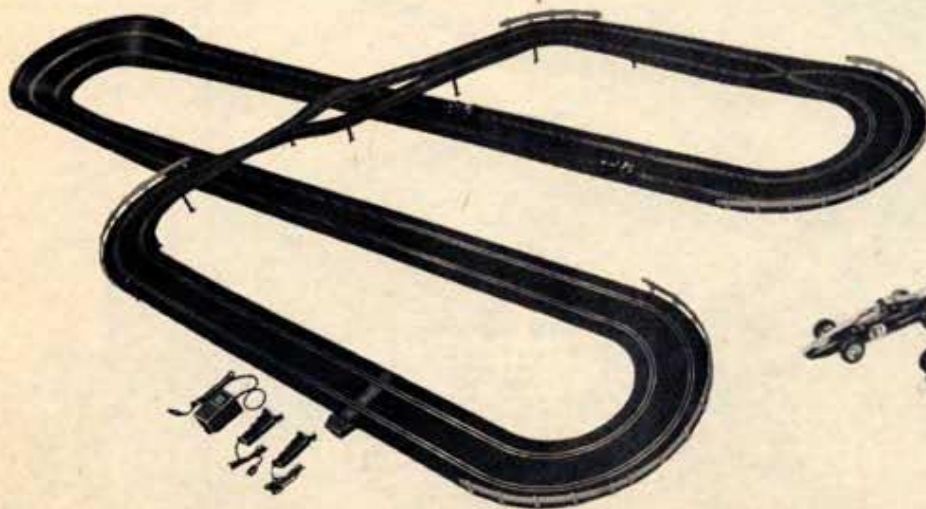
The big move back to racing at home is on the way! Here are some of the finest home racing sets available. With Christmas just around the corner, you won't get a better chance to "innocently" show these offerings to your friends and relatives. It's a pretty

Here's 44 feet of road racing with plenty of track to convert to numerous types of layouts! Featured are the unique and exciting over/under track and the brand-new steeply-banked Monza wall. Set races both 1/32 and 1/24 cars. The Cumberland has a 1/32 brutal Brawner Hawk and a 1/32 lashing Lotus 38! Cars and controllers are adaptable for use on commercial tracks. Cars have TC-32, 12-volt competition-type motors and aluminum chassis with low centers of gravity. Cars also have new, machined all aluminum wheels, soft tires and high-impact, authentically detailed bodies. Included, too, is the highest-quality, easiest-to-operate starting track with simple plug-in connections for power pack and controllers. Exclusive, self-locking, non-snagging polyethylene fence.

Specifications

Overall Dimensions 12' 6" x 5' 10"
 1 ea. 1/32 scale Competition Designed Lotus 38
 1 ea. 1/32 scale Competition Designed Brawner Hawk
 2 ea. Professional-Type Controllers with Dynamic Brakes
 1 ea. U.L. Approved Power Pack
 9 ea. Curved Track
 25 ea. Straight Track
 1 ea. Lane Changer

1 ea. Starting Track with Plug-In Terminals
 1 set Over and Under Track (3 sections)
 1 set Monza Wall with Spin-out aprons (5 track sections and 3 fence sections)
 9 ea. Fence Sections (For Flat Curve)
 Overpass Supports
 Connector Wires and Locking Lugs
 Strombecker Warranty
 Maintenance and Racing Manual
 \$65.00



Cumberland Classic Racing Set No. 9807

GRAND PRIX Home Raceway



- 4 12" straight track sections
- 12 14" r. curved track sections
- 2 lane changer sections
- 1 straight terminal section
- 1 snap-in lap counter
- 12 day-glo crash fences
- 2 sets one-piece bridge piers
- 1 Power Pack with cord and plug
- 2 controllers with brakes, color-coded to individual cars
- 2 1/24 Scale GP Racing Cars
- Ferrari Squalo 555
- \$45.00

- 8 12" straight track sections
- 12 21" r. banked track sections
- 4 straight banked transition track sections
- 8 sets banked track supports
- 1 straight terminal section
- 12 day-glo orange crash fences
- 4 pair bank transition aprons
- 1.8 amp Power Pack with cord and plug
- 1 Lap Counter
- 2 Controllers with brakes, color-coded to individual cars
- 1 set one-piece piers
- 2 1/32 Scale Racing Cars
- 1 Mustang 2 + 2 1 Camaro SS 350
- \$55.00

DARLINGTON Banked Raceway

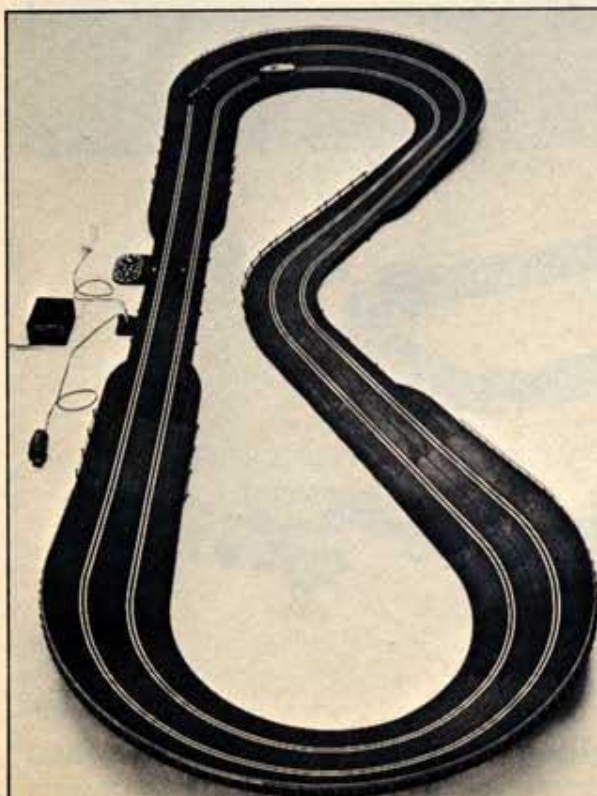


Revell

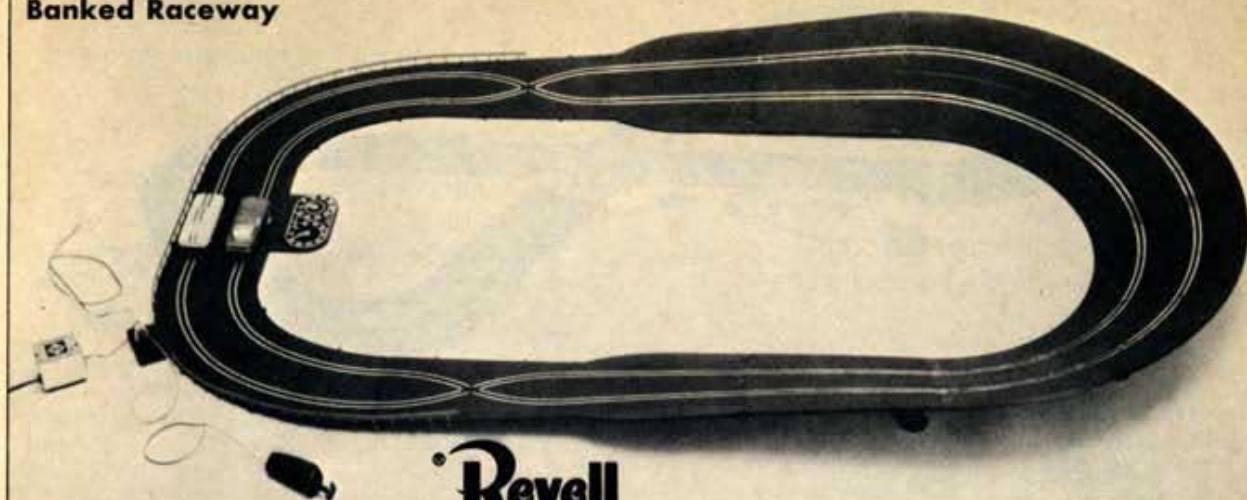
All Revell raceway parts are interchangeable, a very desirable feature that allows your set to "grow" with your racing budget. You can start as big or small as you like, and keep adding accessories until you have the most complex racing layout you could ever hope for!

MONZA Banked Raceway

- 8 12" straight track sections
- 2 21" r. curved track sections
- 14 21" r. banked track sections
- 4 straight banked transition track sections
- 1 straight terminal section
- 1 Lap Counter
- 10 sets banked track supports
- 14 day-glo orange crash fences
- 8 12" straight aprons
- 2 21" r. outside aprons
- 3 pair bank transition aprons
- 1 set one-piece piers
- 1.8 amp Power Pack with cord and plug
- 2 controllers with brakes, color-coded to individual cars
- 2 1/24 Scale GP Racing Cars
- Ferrari Squalo 555
- \$65.00



REBEL "400" Banked Raceway



Revell

2" straight track sections
1 14" r. curved track sections
2 21" r. curved track sections
6 21" r. banked track sections
2 straight banked transition track sections
2 lane changer sections
1 snap-in Lap Counter
1 14" r. curved terminal section
5 day-glo crash fences

2 pair banked transition aprons
4 sets banked track supports
1 Power Pack with cord and plug
2 controllers with brakes, color-coded to individual cars
2 1/32 Scale Racing Cars
1 Mustang 2 + 2, 1 Camaro SS 350
\$45.00



1/32 Road Race Set \$35.00

4' 9" Long x 2' 7-3/4" Wide

1 Straight Track

6-14" R. Curved Track

1 Terminal Track

2 Cross-Over Track

6-14" R. Outside Guard Rail Apron

2 R.H. Transition Guard Rail Apron

R L.H. Transition Guard Rail Apron

1 Power Cord

1 Power Pack

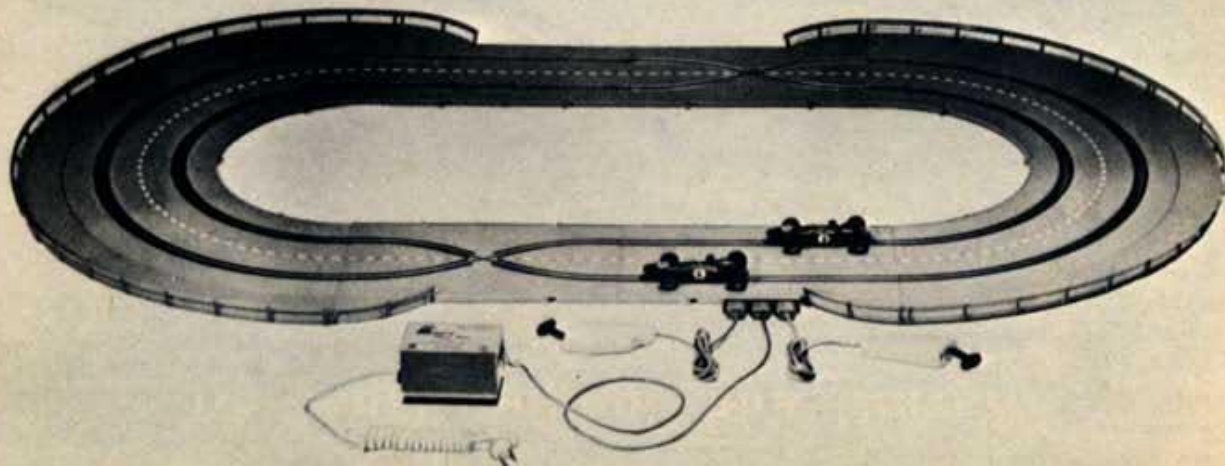
2 Control Handle

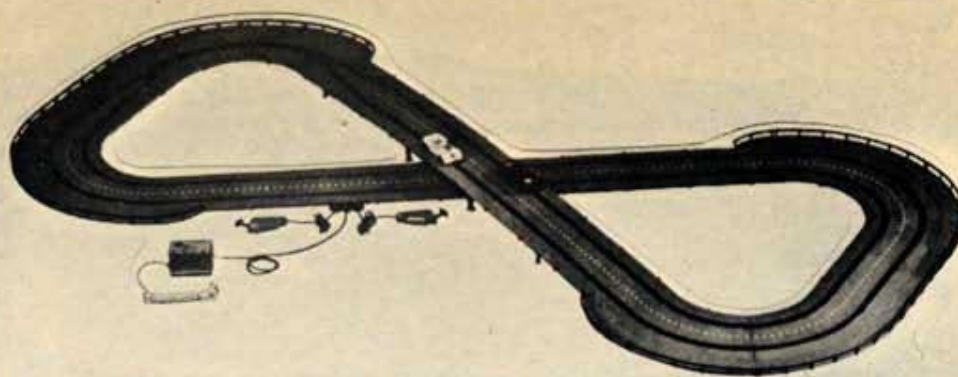
1/32 LOTUS GP

1/32 FERRARI GP

WATKINS GLEN

"Grand Prix" racing and "Watkins Glen" are synonymous and this "fun" oval track brings out the best in the Monogram "cigar thin" GP machines. Note the lane-change sections which make both track lanes identical in length.





1/32 Road Race Set \$55.00

7' 11- $\frac{3}{4}$ " Long x 3' 8- $\frac{3}{4}$ " Wide

9 Straight Track

6-14" R. Curved Track

1 Terminal Track

2 Straight Chicane Track

2 Curved Chicane Track

8-14" R. Outside Guard Rail Apron

2 R.H. Transition Guard Rail Apron

2 L.H. Transition Guard Rail Apron

2 Straight Guard Rail Apron

10 Support Column

1 Power Pack

2 Control Handle

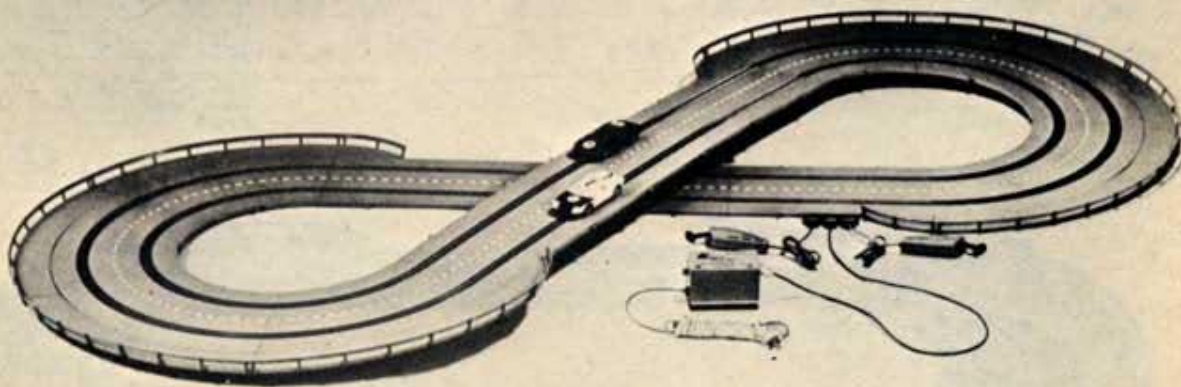
1 Power Cord

1/32 LOLA T-70

1/32 CHAPARRAL II

"Road America" is a magic name in U.S. racing circles. This figure "8" layout bears the proud name of this great Wisconsin road racing course. It's 19' 4" per lap of pure thrills!

ROAD AMERICA



1/32 Road Race Set

\$45.00

6' 2-9/16" Long x 2' 8-9/16" Wide

5 Straight Track

8-14" R. Curved Track

1 Terminal Track

8-14" R. Outside Guard Rail Apron

2 R.H. Transition Guard Rail Apron

2 L.H. Transition Guard Rail Apron

10 Support Column

1 Power Pack

2 Control Handle

1 Power Cord

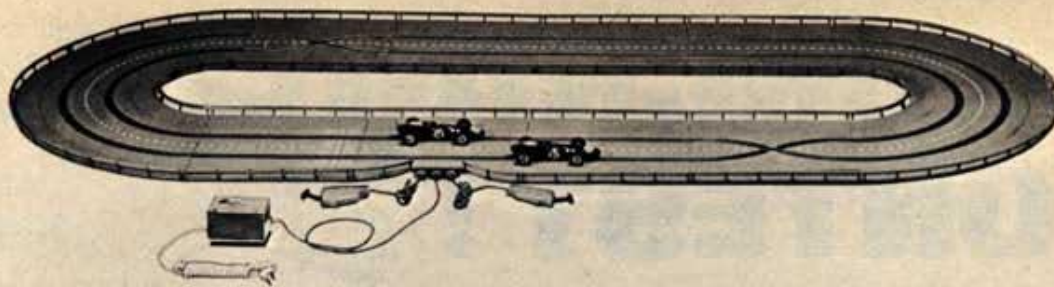
1/32 FORD GT

1/32 FERRARI 330P/LM

If you don't know what 'Le Mans' is, you're probably brand new to the sport of automobile racing. If so, welcome, and you can't go wrong with this version of that famous racing course, which is located in France.

LeMANS

INDY LOTUS



- | | |
|------------------------------------|------------------------------------|
| 1/24 Road Race Set \$55.00 | 1 L.H. Transition Guard Rail Apron |
| 4 Straight Track | 15 Straight Guard Rail Apron |
| 6-14" R. Curved Track | 1 Start-Finish Track |
| 1 Terminal Track | 1 Power Pack |
| 2 Cross-Over Track | 2 Control Handle |
| 6-14" R. Inside Guard Rail Apron | 1 Power Cord |
| 6-14" R. Outside Guard Rail Apron | 1/24 LOTUS "38" |
| 1 R.H. Transition Guard Rail Apron | 1/24 LOTUS "38" |

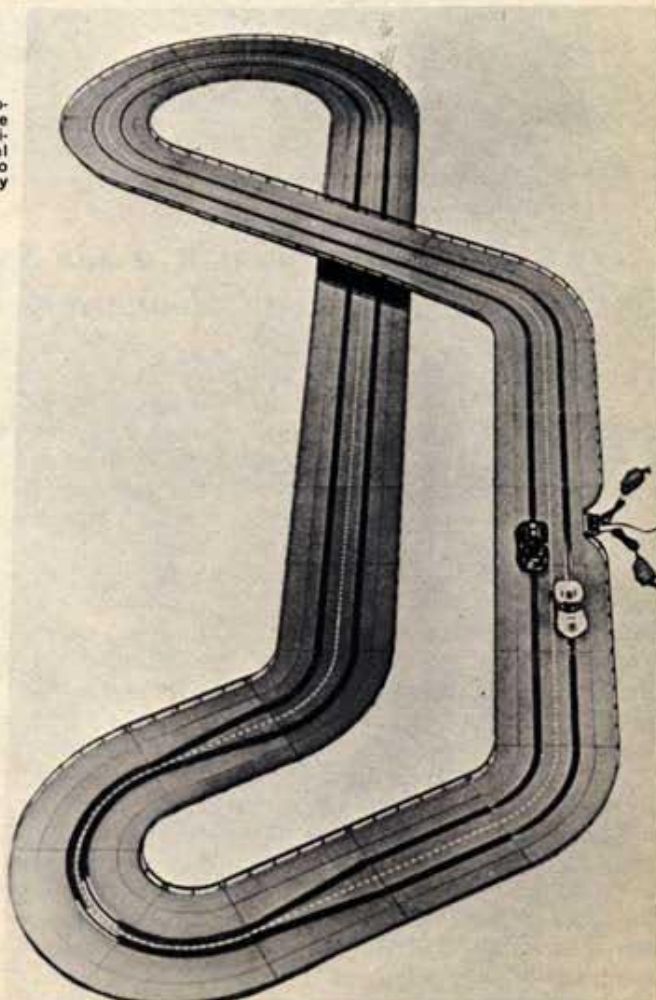
Whether you're an auto racing fan or not, you'll have heard of Indy! The "greatest spectacle in racing" can be yours when you purchase this fine racing set.



RIVERSIDE

Monogram's great "Riverside" set captures the "wide open spaces" of the great Riverside racing track, in California. This set is big, with a total length of 13' 4" that allows you to really "get on" the throttle, and stay on it!

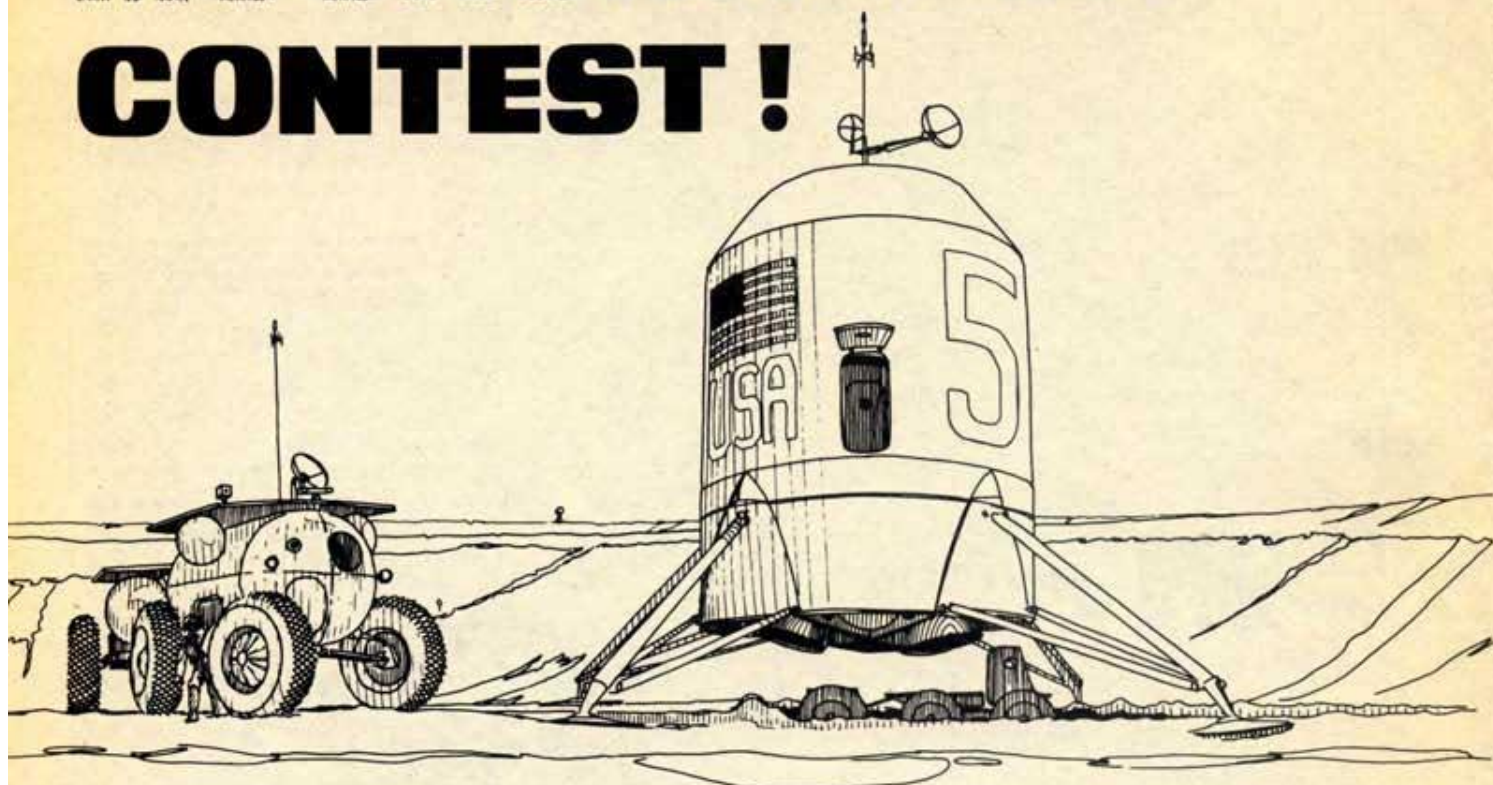
- | |
|------------------------------------|
| 1/24 Road Race Set \$80.00 |
| 13' 5 1/2" Long x 5' 6 1/8" Wide |
| 3-14" Curved Track |
| 8-21" Curved Track |
| 17 Straight Track |
| 1 Terminal Track |
| 2 Straight Chicane Track |
| 3 Curved Chicane Track |
| 6-14" R. Inside Guard Rail Apron |
| 6-14" R. Outside Guard Rail Apron |
| 1 R.H. Transition Guard Rail Apron |
| 1 L.H. Transition Guard Rail Apron |
| 8-21" R. Inside Guard Rail Apron |
| 8-21" R. Outside Guard Rail Apron |
| 39 Straight Guard Rail Apron |
| 14 Support Column |
| 1 Power Pack |
| 2 Control Handle |
| 1 Power Cord |
| 1/24 McLAREN-ELVA |
| 1/24 CHAPARRAL II |



MC&S

MOONCRAWLER

CONTEST!



Here's your chance to win a \$25 Savings Bond and a free subscription to MC&S! Build a "Mooncrawler"

Prior to a manned landing on the the surface of the moon, it is essential that a complete investigation of its terrain be conducted to assure human survival.

A mobile mechanical package that will provide a platform for instrumentation designed to return scientific data, is essential to this explorer program. There are many U.S. firms involved in the research and development necessary to accomplish this fantastic feat.

A "mooncrawler" would have to be equipped with an exterior mounted stereo-TV camera that would enable scientists on Earth to steer the vehicle and scan the lunar geography, seeing what it sees! Now *that's* what you can really call "long distance driving" wouldn't you say?

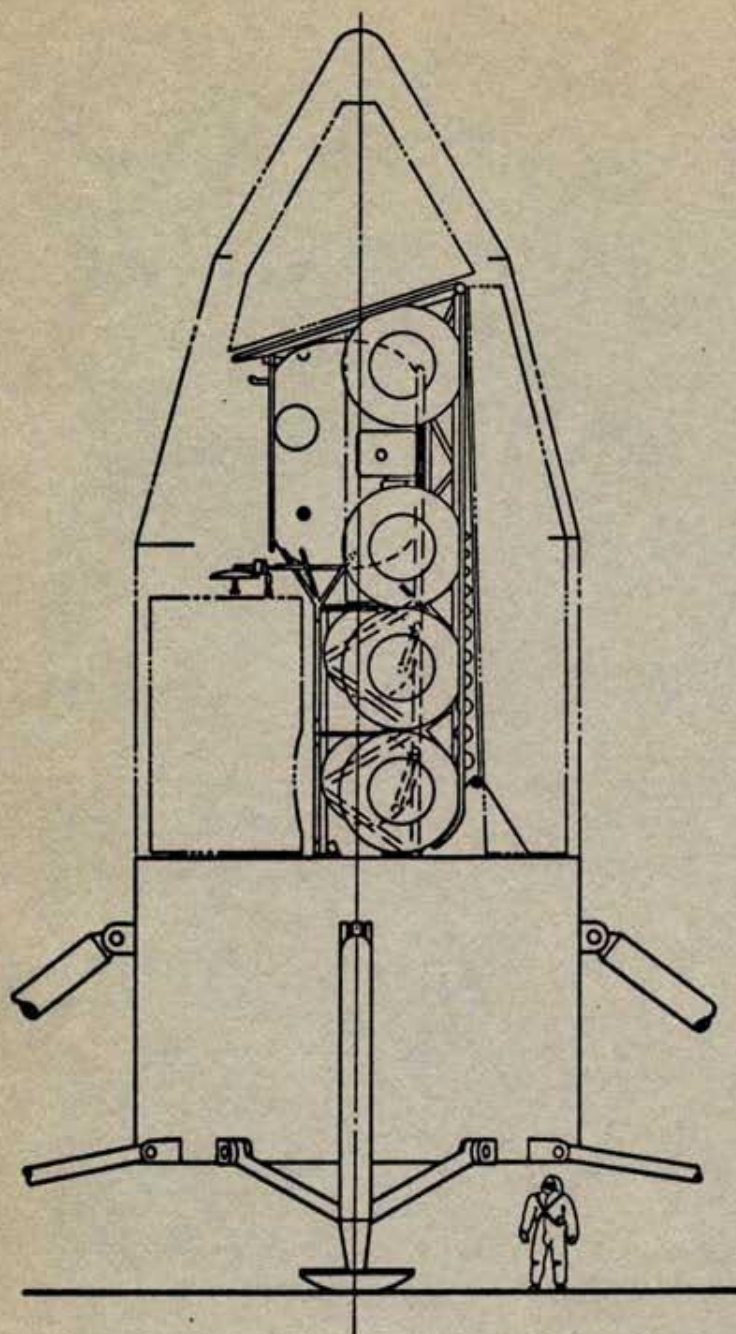
The crawler can't weigh too much, however, as every ounce counts during liftoff, even when the rocket doing the launching is the gigantic Saturn. Therefore, the mooncrawler must be built with "efficiency plus" in mind. You'll find no excess weight on a mooncrawler! It must provide internal power for instrumentation and communication systems, not to mention motive power. Solar cell systems gather energy from the sun via folding panels that extend directly from the body shell. The antenna is located atop the panels, on most moon crawler vehicles.

A real mooncrawler has a life time of about two months on the rugged surface of the moon, due to the extremely cold nights, and excessively hot days.

We'd like to see what kind of a mooncrawler *you* can build! Let's face it, it would make a very interesting model, parked on your display shelf!

You can scratchbuild to your heart's content! And to provide you with a little incentive, we'll give a \$25.00 Savings Bond, plus a FREE year's subscription to MODEL CAR & SCIENCE magazine, to the winning entry. Here's how to enter: The MC&S MOONCRAWLER CONTEST deadline for entries is January 1, 1968. This will give you time to build your mooncrawler and have photos taken and sent to us. Our staff will judge all entries. Do NOT send the actual model of your mooncrawler! And *please*, do not send color shots, as we cannot print them in the maga-

Photos and technical information, courtesy AC Electronics, Division of General Motors Corporation.



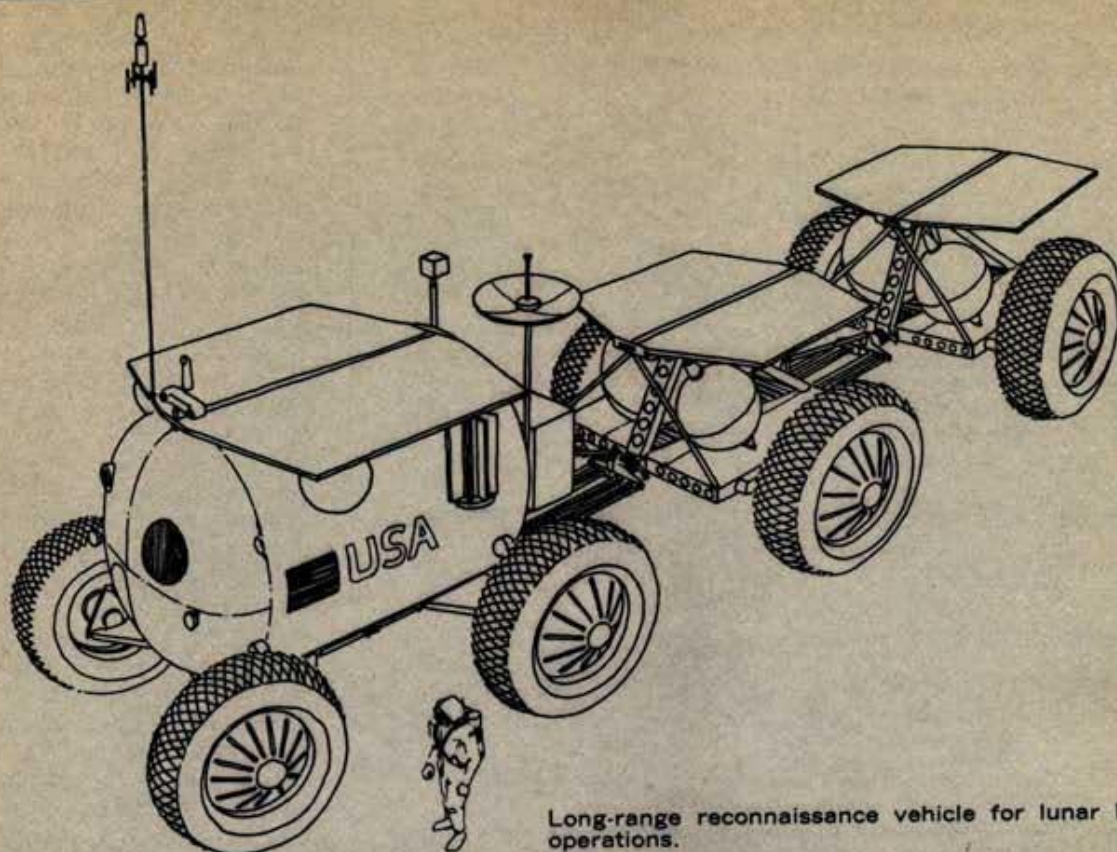
Base reconnaissance vehicle stowed in Saturn V Lunar logistics system spacecraft.

zine. All we want from you is a clear, black and white photograph (or several) of your mooncrawler model. And please, send us a brief description of the model. We'd like to know what materials you used, how long it took to build it, and any other information you think would interest our readers. You *need not* follow any of the drawings you see here. *Let your imagination be your guide!* When the contest is over, we'll run a complete story on the best of the mooncrawler pictures, and let you (and thousands of others) see how your model stacks up against the other contestants.

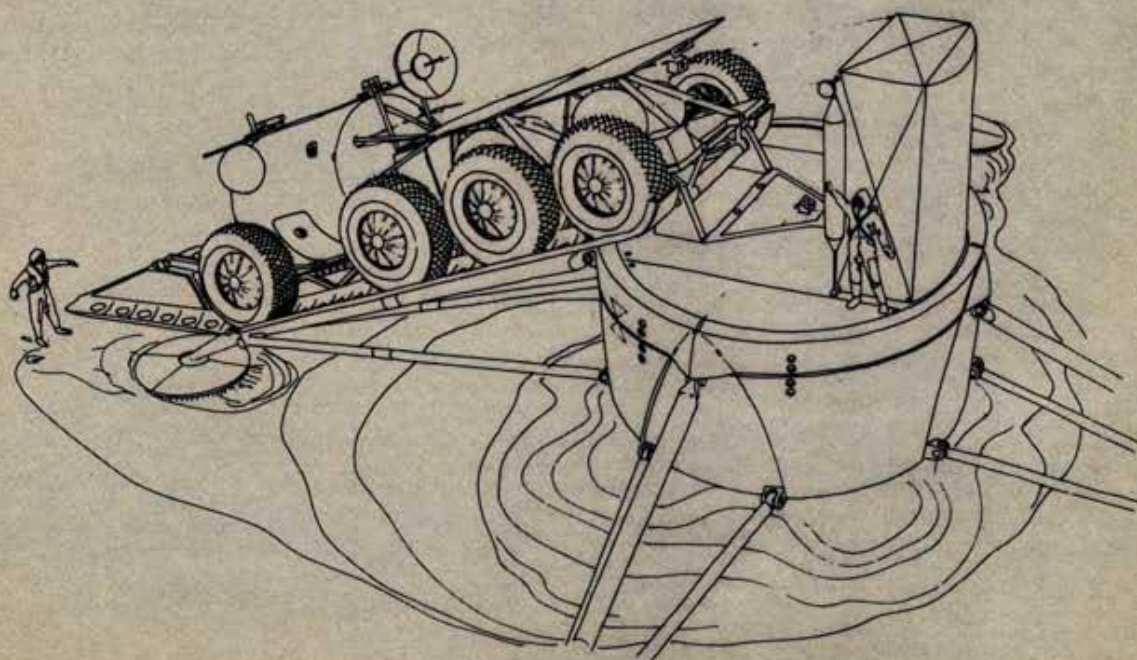
Send your photograph to the Contest Editor, "MOON-CRAWLER" Delta Magazines, 171 Barrington Place, West Los Angeles, Calif. 90049, no later than January 1, 1968. Remember, *do not* send the actual model.

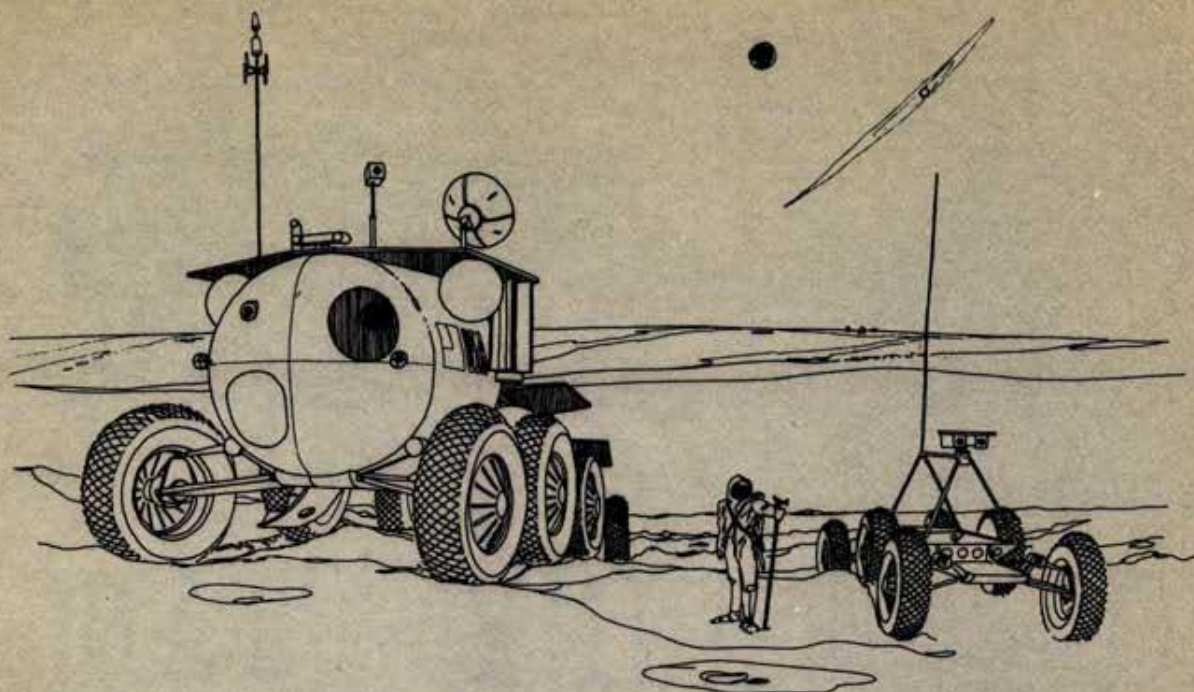
Hop to it guys! The model can be any size, and made of any material, and your imagination is the only limiting factor! Now if that doesn't give you plenty of lee-way, we don't know what does!

Hurry! Enter the MC&S Mooncrawler Contest! *All* entries will be carefully scrutinized by our panel of judges, which include several top engineers from NASA, (National Aeronautics and Space Administration). The time to start, is NOW! Good luck.



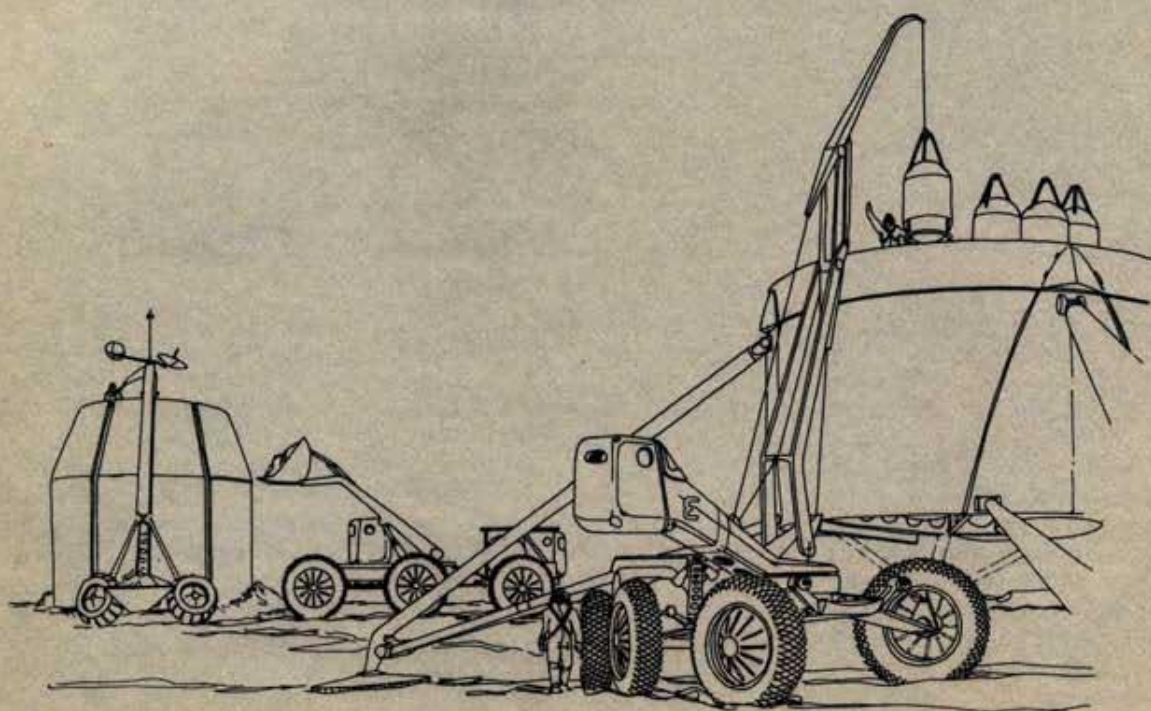
Base reconnaissance vehicle deployed from the spacecraft.





Long-range reconnaissance vehicle, with smaller local utility vehicle.

Construction and material handling vehicles.



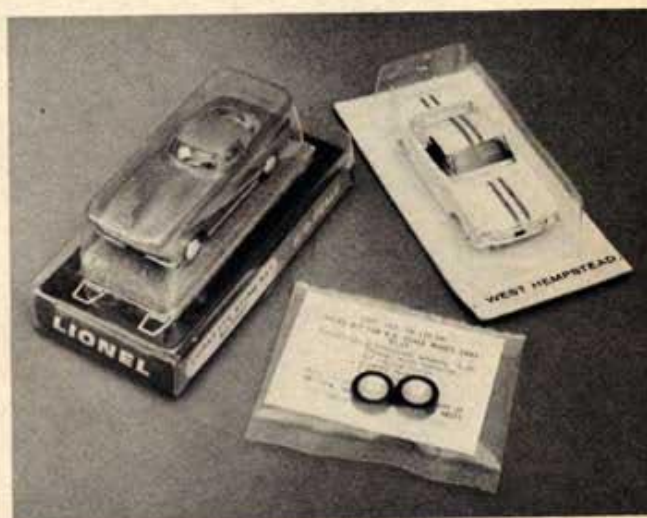


HO "FUNNY 'TANG"

"Funnin' down the quarter
in 1/87 scale"

The Aurora line of HO scale bodies will fit just about any HO chassis. We chose a Lionel Stingray, but any other is OK.

By Bob Schleicher



HO is *the* racing size for fun, and funny cars are nothing *but* fun! Here's how to build your own "funny" HO car. Purchase one of Aurora's 50 cent replacement bodies from a toy store that carries Aurora spare parts, and then add a set of rear tires and wheels to suit your fancy. I used AJ's \$1.25 threaded steel wheels and axle with Silicone tires, but AJ's 49 cent plastic wheels would work if you'll epoxy them on.

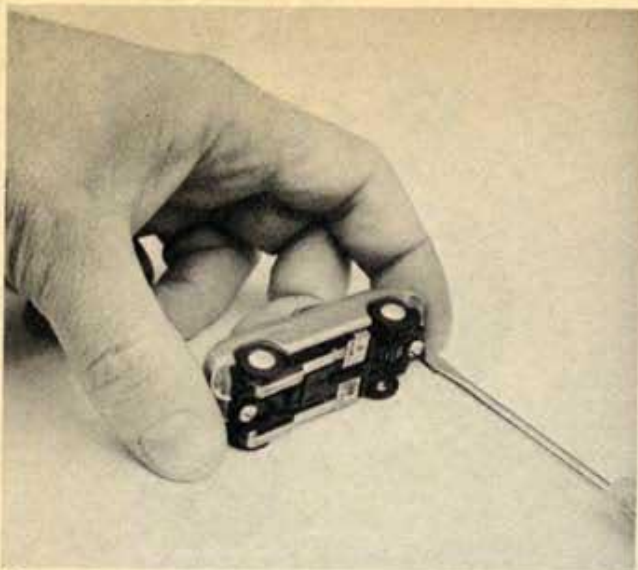
HO racing is inexpensive and *fun*. The ideas presented on these pages, show a number of

different ideas and many "hop-up" parts and ideas. You can apply at least one idea from every article to *any* HO car.

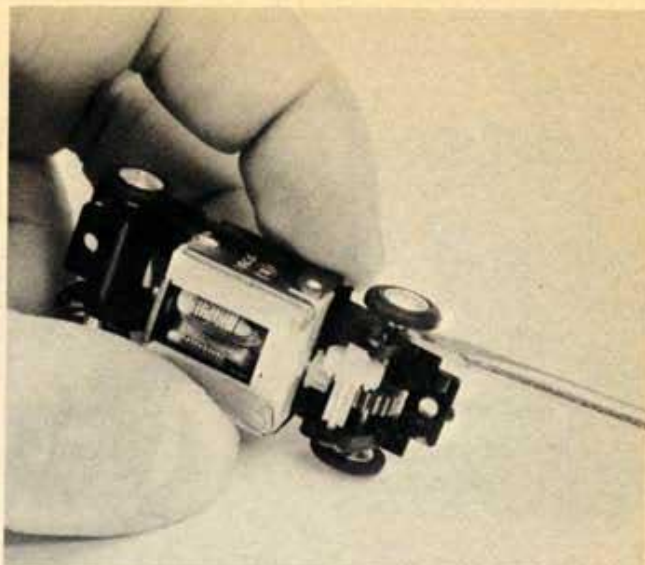
This month's Mustang uses a body that can be easily adapted to fit the chassis you have on hand. The "exotic" silicone rear tires and wheels are extra-cost options that are *not* absolutely needed. I mentioned the more obvious substitutes earlier, or you can keep the stock tires.

The idea is to give you more and more ideas about the literally thousands of things you can do to your HO cars to have more

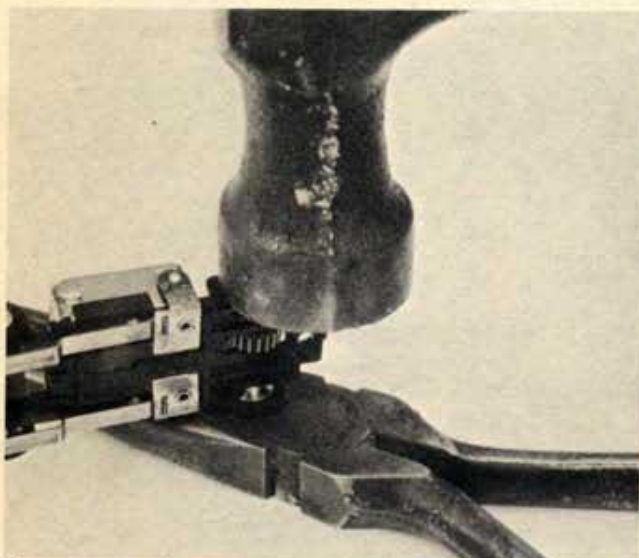
fun. The Mustang Funny Car is one such idea; we'll have dozens more in issues to follow. Our HO motto, if you can call it that, is "If it can be done in the bigger scales, it can be done in HO too." So far, stock cars, sports cars, vintage cars, and funny cars have appeared on these pages. Hop up ideas as well as vacuum formed bodies, "German" foam tires, and other speed-secrets have been illustrated. And MC&S is just getting started! If you like HO, stick around, there is more ahead.



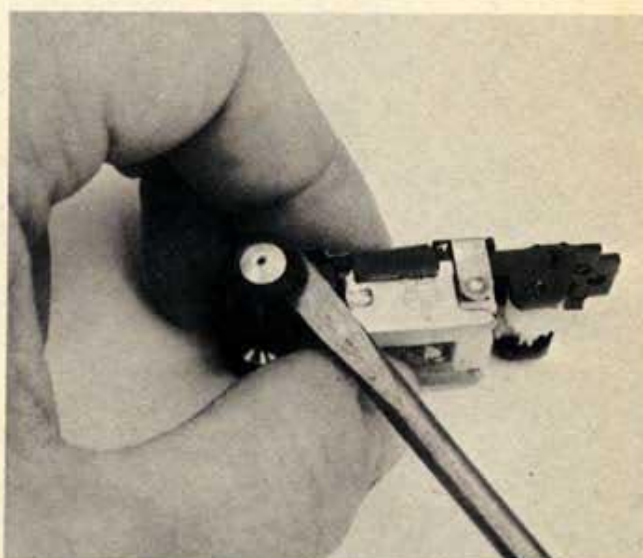
Your stock HO car must be disassembled before it can be rebuilt into a screaming terror.



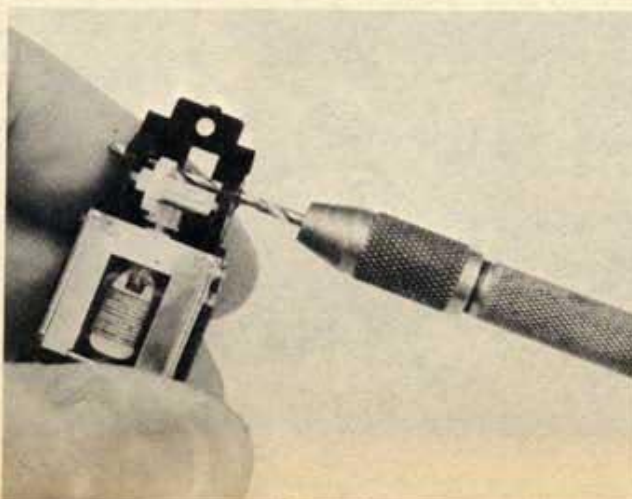
Pry the rear and front wheels from the chassis. Lionel uses sturdy metal ones, so use a little pressure to remove them.



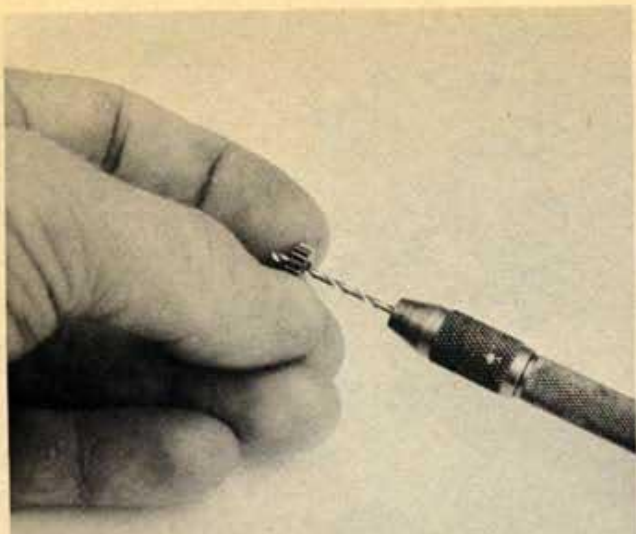
The rear axle will have to be driven from the chassis. Place over the gap between plier jaws, and drive the axle through.



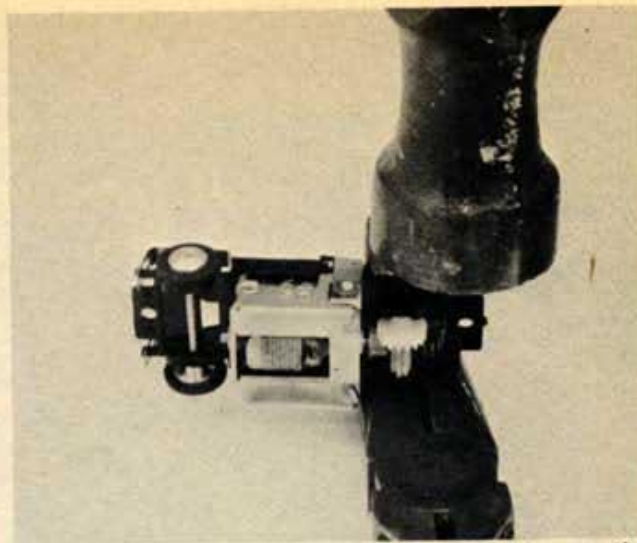
The wheel base of the Aurora Mustang body is shorter than Lionel's 'Vette, so the front axle will have to move back a hole.



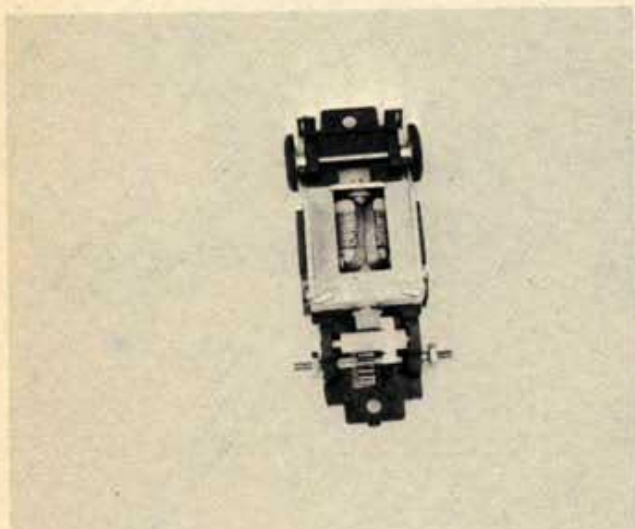
Lionel, Tyco, and some others, have a slightly smaller axle than that supplied with the AJ's HO Silicon tires. Drill the bearing holes with a #51 drill.



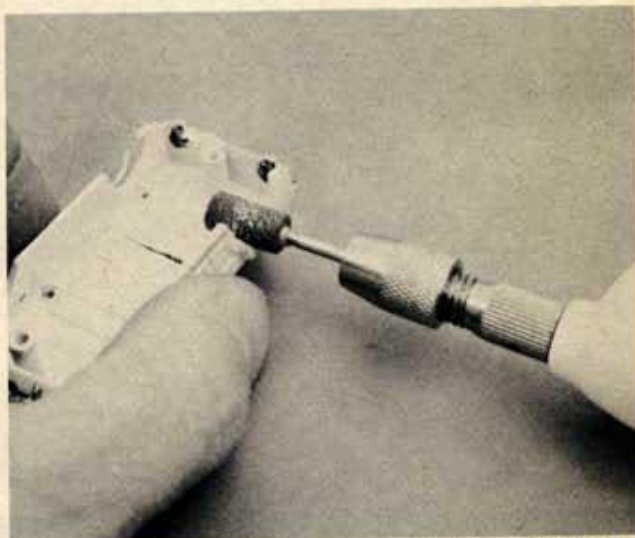
Drill the axle gear with a #52 drill bit, so it will be a press fit on the splines of the AJ's axle.



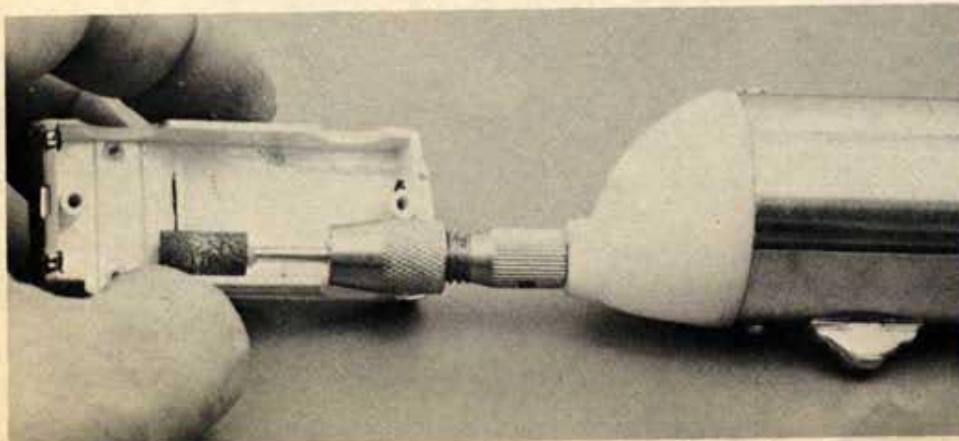
Place the chassis over the gap in a pair of pliers so the rear axle can be driven through the gear without hitting the table.



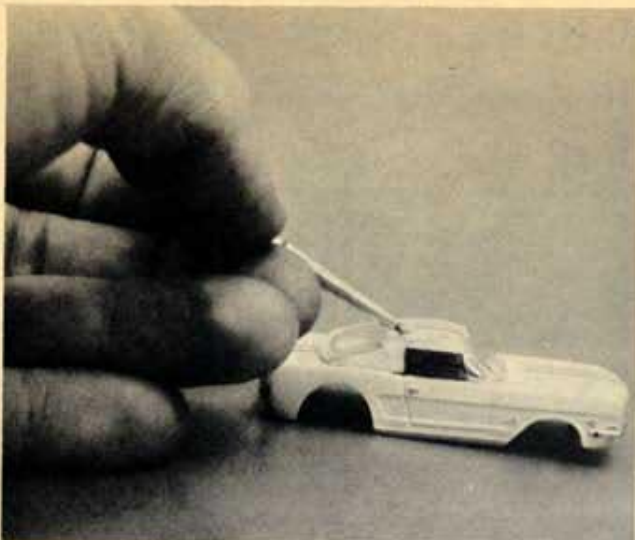
The new AJ's axle has lock nuts to hold the rear wheels in place. If you want more power from Lionel HO cars, refer to the April '67 MC&T.



An X-Acto battery-driven power tool is enough to grind away the rear wheel openings to clear the larger tires. Trim with an X-Acto knife, and finish off with fine sand paper.



The rear portion of the cockpit on the Aurora Mustang body is trimmed away to allow the body to sit down on the chassis.



The windows on the 'Tang look too large, so paint the top from the inside (it's clear plastic) with Pactra "Body Shop" Lacquer. It's a close match for the yellow. Before you paint, some body putty would help to fill in some of those gaps.



Mount the body with the original two screws. A 1/16" scrap of plastic is needed between the front body post and chassis.



Letraset brand, dry transfer numbers are the best bet for any HO scale car. Just rub over them and they transfer to the car.



We tried to capture some of the features of the famous Tasca Ford Funny Car by duplicating their letters and numbers. Numbers and "B/SP" are 5/32" Letraset, while "Tasca" is 1/16". Three decals are 1/32 scale Russkit items.



**Here's gas powered action, with no strings attached!
Here's what's available in the exciting
world of radio controlled racing**



QUICK CAMARO!

By Charles Eckles

I just received the new Camaro SS 350 gas-powered race car from Otto Henke, product manager for Wen Mac.

Wow! I feel just like Tom McCahill testing new cars! Move over Uncle Tom!

All right now, settle down, we will get to the facts. The very first and *important* fact is that this car was assigned to me with no strings attached! There were no strings, tethers or cables attached because it runs free! This car can be adjusted to race in any diameter circle from about eight feet to fifty, and when I say about fifty I mean

just that, because when it is racing in his large circle it is traveling "flat out" and the tires are only touching the asphalt part of the time.

Up front, under the hood, is the complete power plant and drive train, just like the big boys, Cadillac and Oldsmobile. Power is supplied by the new Thunderbolt .049 engine and delivered to the front drive by a nylon gear. By the way, this new engine is covered by a three year factory guarantee. How about that!

Change of race circle diameter is accomplished by a real unique

and effective adjustment of the rear axle.

The body is a beautifully detailed 1/20 scale duplicate of the popular Camaro SS 350. Decals are complete pressure-sensitive type and are fuel proof.

The wildest thing of all, however, is the price tag! How does \$12 grab you? And that's complete friends, except for the gas and battery. Wen-Mac also sells a complete "Power Racing Kit" for \$3.00 that includes the following: Starter battery, battery clips and wires, fuel tube and spout, fuel, and an all-purpose engine wrench.



Wen-Mac's "all gone" gas-powered Camaro is a show-stopper, in 1/20 scale. From any angle, it looks as sharp as the real thing! And you can race



it in a circle, with no strings (or tethers) attached, thanks to an ingenious method of setting the front wheels at the right angle.

Fuel, a battery, and the Camaro is all that is needed for an afternoon of pure fun!



Total everything up and it comes to a low, low \$15.00 for a gas-powered, 1/20 scale Camaro that is rugged enough to keep running no matter how many times you take it off into the "boonies."

O. K. so much for the facts. I guess you know it didn't take me very long to round up the WenMac Racing Kit and load the whole works in the car and head for my favorite test track, (the local shopping center parking lot).

After adjusting the steering for a medium circle I gassed it up and after a couple of snaps

the "snap-starter" fired up the Thunderbolt, and the action started! A minor adjustment of the needle valve touch control and I was getting maximum r.p.m. Securing the body, I put the tiny tiger on the asphalt and released it. The moment of truth! After laying down a strip of black smoking rubber it began to move faster and faster until it was cranking around a twenty foot circle so fast that it was in a four wheel drift and it stayed there. No spin out, just a beautiful high speed circle.

About ten laps later it drifted to a stop and by this time it had

acquired quite an audience.

After racing much more, and in different size circles and once in a straight line (that was a mistake) I packed the little tiger back in the car and returned home with the feeling that I had really been racing.

A complete new dimension has been added to the hobby of gas powered model car racing. Wen-Mac really has something going here, and I heartily recommend this little brute for fun and action. It's available nearly everywhere, for a reasonable price. Look it over, next time you see one on display in your local store.

By Forrest Bond

Ed Greer and Dick Barber campaigned a C/Gas Willys under the banner of Pomona, California's C&W Motor Parts with notable success. For 1967 Ed and Dick have added two partners and are sporting a new car.

Dedicated to the Street Eliminator category, Ed and Dick, together with Tom Conley and John Sprinkle, are competing in B/Street Roadster with an Ermine White '29 Ford roadster. The body is all steel and, except for the removal of the running boards and front fenders, is "as stock as possible," says the owners.

The engine is a '67 Chevy 283 which retains stock bore and stroke. Mickey Thompson 10.5:1 pistons ride on stock rods, are actuated by stock crankshaft. Heads are the work of Valley Head Service, sport 2.02-inch intakes and 1-11/16-inch exhausts.

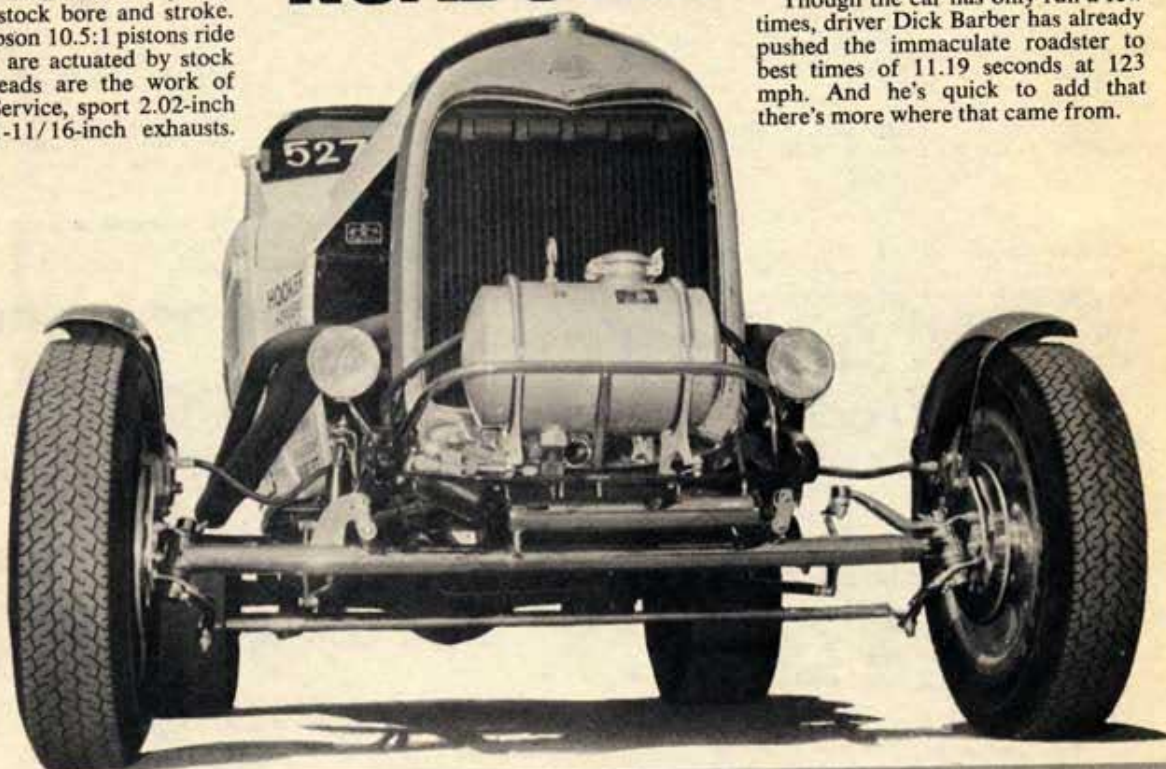
STORMIN' STREET ROADSTER

Crane cam, lifters and single springs are joined by stock pushrods and Gotha forged steel rockers to complete valve train. Hilborn injectors feed the gas, which is fired by a Cirello-reworked Schiefer magneto and Champion plugs. Hooker headers take care of waste.

Taking the horsepower to a Pontiac rear end with 5.38 gears are Weber clutch and flywheel and four-speed trans. Henry's axles are used.

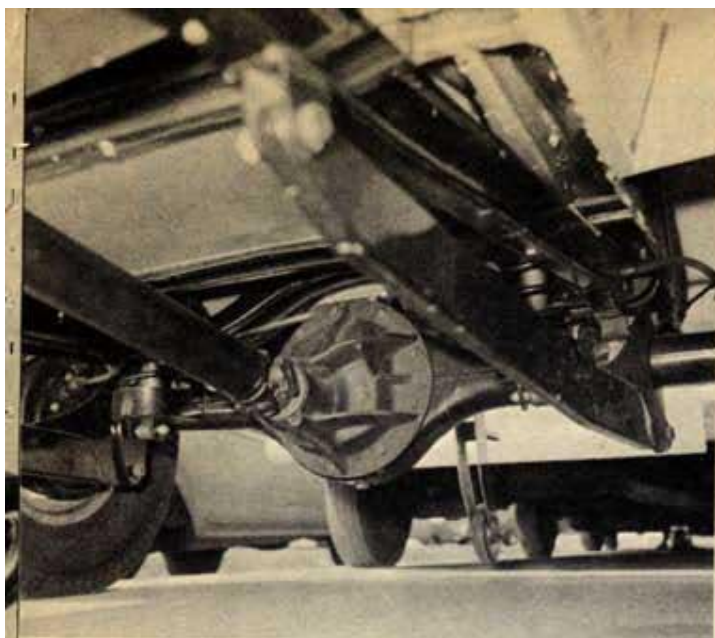
Halibrand mags on all four corners mount Goodyear front and M&H rear tires. Tube axle, traction bars and other chassis work were performed by Conley's Manufacturing and the owners.

Though the car has only run a few times, driver Dick Barber has already pushed the immaculate roadster to best times of 11.19 seconds at 123 mph. And he's quick to add that there's more where that came from.



Four racers from California have joined forces to produce an immaculate roadster that bears a strong resemblance to the "good old days."





Pontiac rear end carries 5.38 gears and Henry's axles. Coil springs and sturdy traction bars provide steady flow of horsepower to rear wheels.

Rigidly-mounted fifth wheel is industrial item, stops any tendency to wheelstand. Effective use of chrome makes for tasteful appearance.



Front axle is chromed, mounts Don Long hubs and Airheart disc brakes. Front wheels are Halibrand magnesium units, carry Goodyear rubber.

↑ Injected Chevy engine is '67 283 with stock displacement. M/T 10.5:1 pistons ride on stock rods and crank. Crane cam and kit actuates valves in heads reworked by Valley Head Service.

← C&W street roadster bears striking resemblance to old time roadsters, still gets performance job done. Irmine white paint is set off by gold leaf lettering trimmed with black. Chassis and roll bar are black.

→ Immaculate interior retains stock flair. Use of full carpeting reflects owners' intention to keep the roadster "as stock as possible."

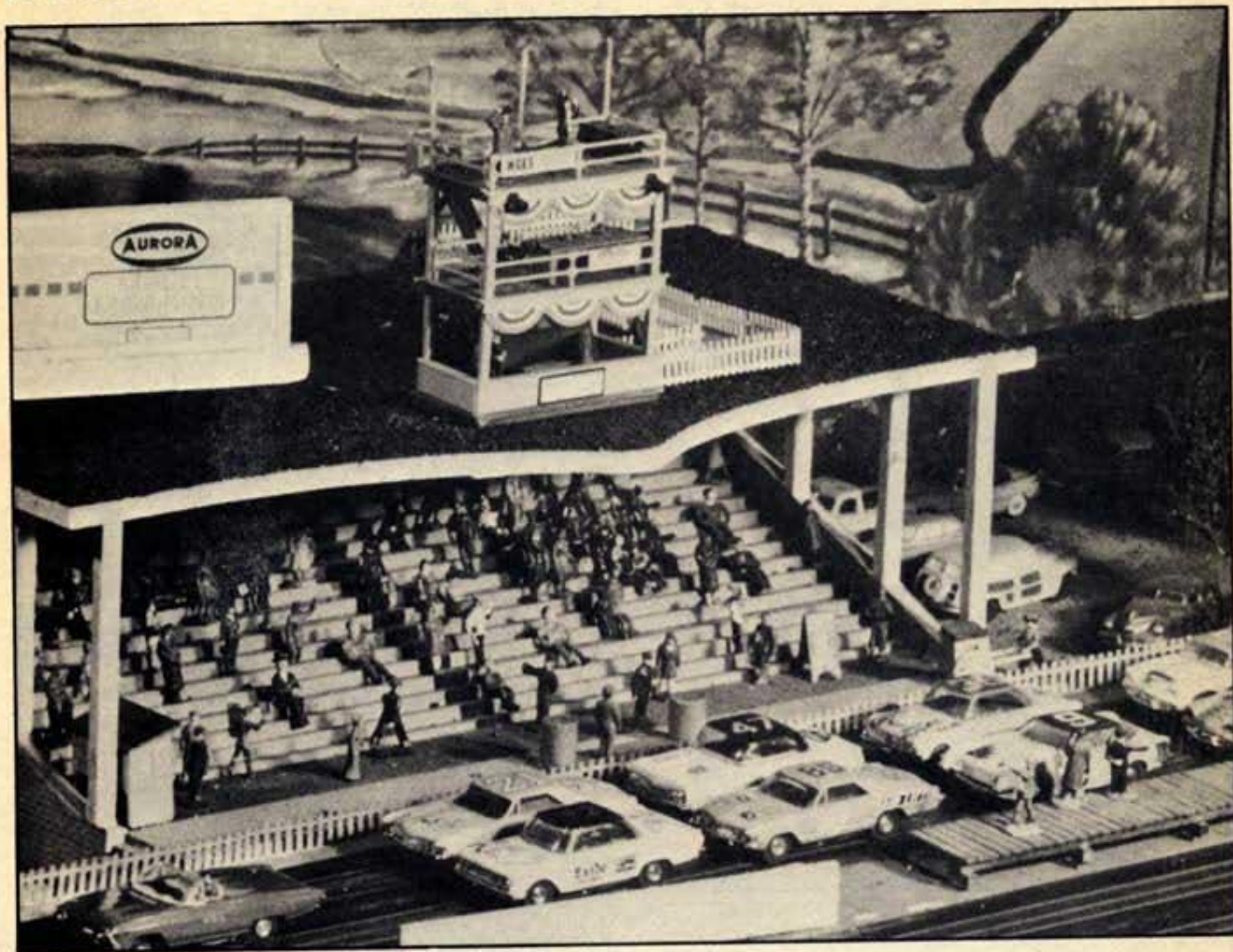


THE HO RALLY ROAD

Part
IV

By Robert Schleicher

The MC&S HO scale home track gets a coat of color and the final, finishing touches



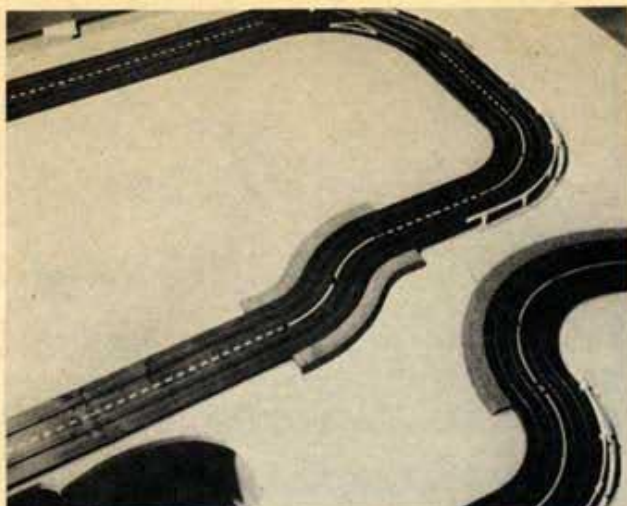
A large measure of the pleasure and excitement possible in model car racing is based on the way our models simulate real racing cars. This hobby/sport has excitement in the speed and competition of car against car, driver against driver, with the most successful combination of each finding their way to the winner's circle. It is almost like being in the actual cockpit of the car! Of course, you aren't actually in the cockpit, you only think you are! You simply let your imagination run wild.

If you are able to improve the appearance of your track, it is far easier to get that ole' imagination "in gear." Those full-size

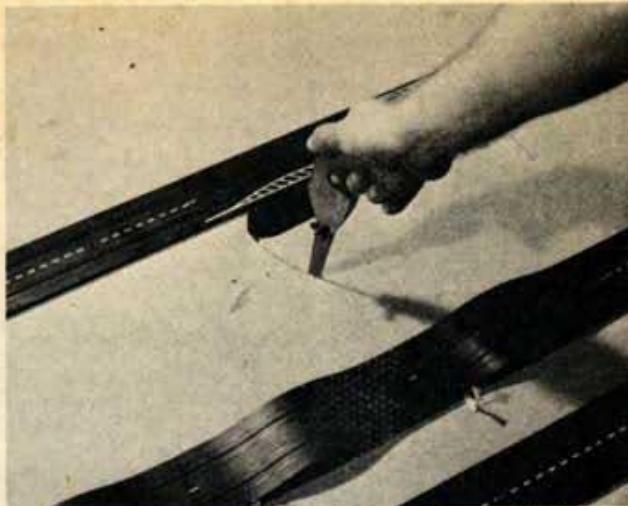
cars don't race across an empty wooden tabletop, and there's no reason why your model cars should either.

The final improvement on our HO scale Rallye Road is the addition of the land around the track. While we're at it, we'll include trees, grass, and a lake to make a true-to-life landscape scene of this racing plant. We assume you prefer cars to hills, so we'll keep the scenery as easy as our experience can. The addition of a few drops of liquid into some thicker liquid is a simple chore. Pour the liquids we suggest (resin, dye, & catalyst by Natcol) into a valley in your plaster hills, and there's a lake!

Trees are merely bits of a special moss from Norway, called Lichen. Any hobby shop that carries model railroad equipment will have it, dyed in green or various shades of red and grey, to simulate either Summer or Fall foliage. You can use the powdered grass sold by these same hobby dealers, but this can work its way into the motors of your cars. No loose materials like this should ever be part of a model raceway's scenery. TruScale has a paper mat that is a good imitation of grass, and it won't work loose. Light puffs of green spray paint on tops of hills and knolls will help to make things look "alive" as well.



The two half pieces of six-inch radius curve that we cut apart last issue, can be held securely in position by lining both edges with the cork model railroad roadbed. A bit of each end can be trimmed away from the pickup strips if you have any difficulty getting electrical contact.



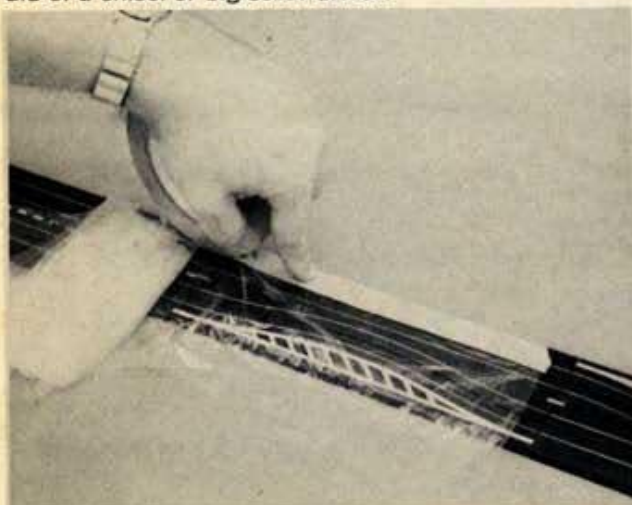
Drill a $\frac{3}{8}$ " or larger hole in the table top for the lake, and saw with a keyhole saw. An electric sabre saw would save time.



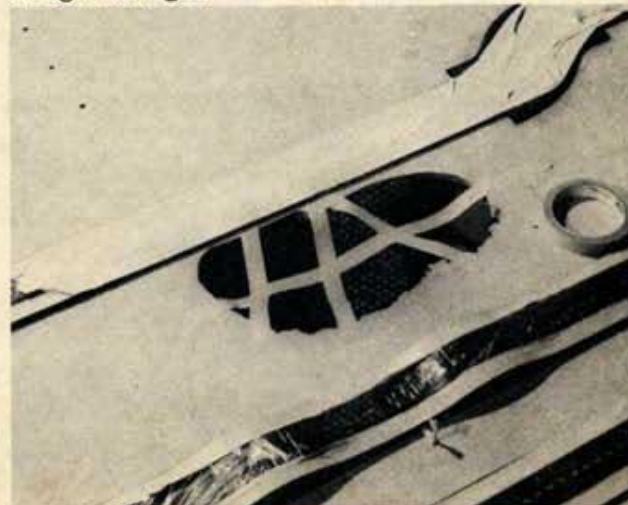
It is a little crude, but this type of a rough-edged opening can also be cut out by drilling a number of $\frac{1}{4}$ " holes, then knocking the section out with the aid of a chisel or big screwdriver.



The lake opening can be located just about anywhere on the track. Note how a series of 4 Aurora humps are used to make up the undulating straight on right.



Roll up one of the thin plastic bags that dry cleaners cover your clothes with; cut it into 6" strips with scissors, then tape both edges even with track.



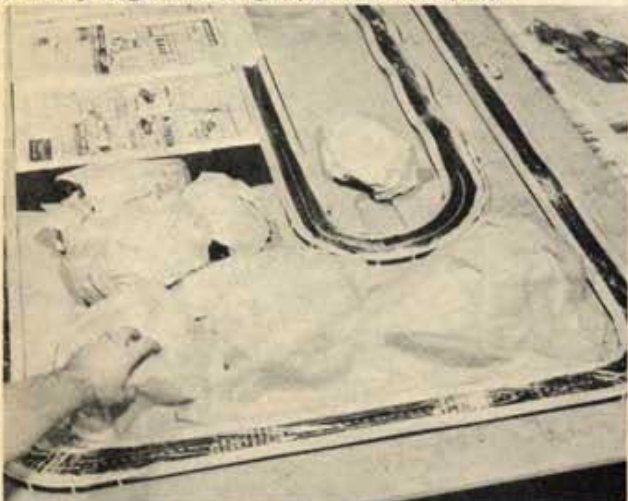
Openings in the table top, like the lake bottom, must have a simple spider web to hold up the light weight scenery.



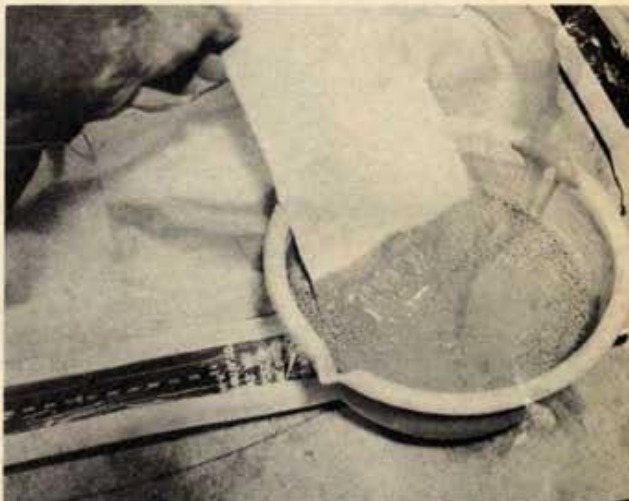
Materials include plaster of paris, or less expensive molding plaster, paper towels, brown dry Tempa colors, liquid detergent, black Rit dye, plastic laundry bags, masking tape, and flat spray.



Tools for scenery: Pyrex bread pan and measuring cup, fine mesh tea strainer, Windex bottle and spray, plastic spatula, tablespoon, scissors.



Wad up newspapers in various sizes to form the basic positions of hills. We later removed some for parking lot location. A TruScale imitation grass mat was used for the pit area, then masked off with paper. Cover hills with wet paper towels.



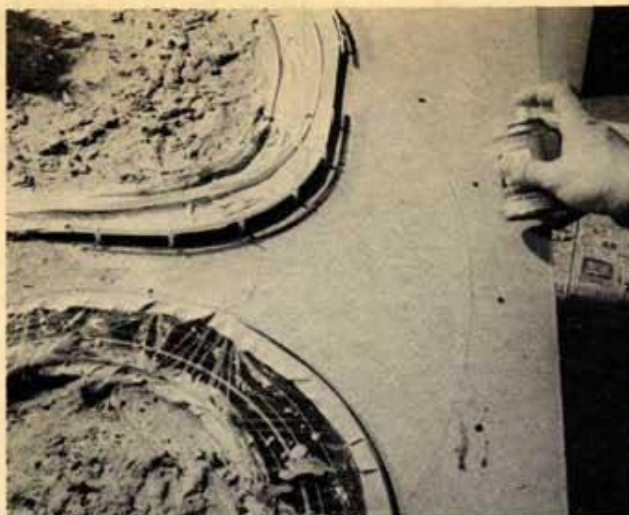
Mix two cups of plaster, then add water about $\frac{1}{4}$ cup at a time, while mixing well, until mix is like a thick cream. Dip half a paper towel into mix, then place on hills. Add 8 tablespoons of the dry color to plaster mix as you go.



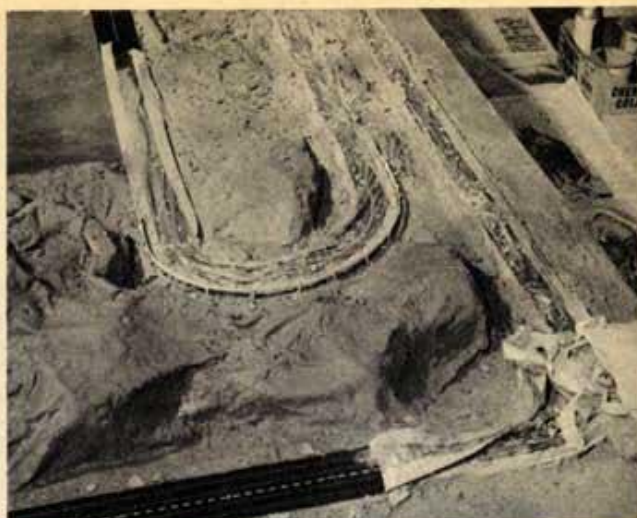
Keep adding paper towels until one area is covered with at least two layers of plaster-soaked towel. As plaster begins to harden, rough over the area with your hand, forcing dry particles into wetter parts.



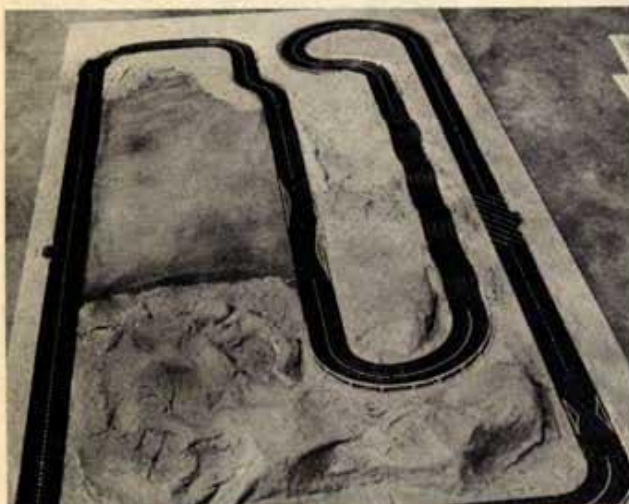
The hills and valleys should look like this photo when properly "roughed." The valley above the humped track will be the lake.



Mask off the guard rails and spray the plain tabletop with Pactra's new flat "Aircraft Grey" to make parking lot area.



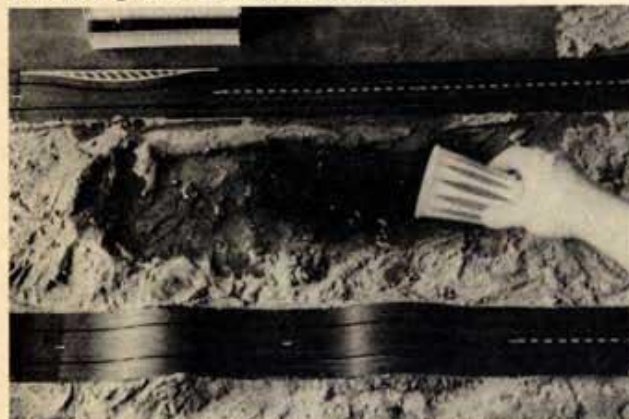
Peel back the masking tape and plastic cover from track surface. Sweep and vacuum all remaining loose dry plaster.



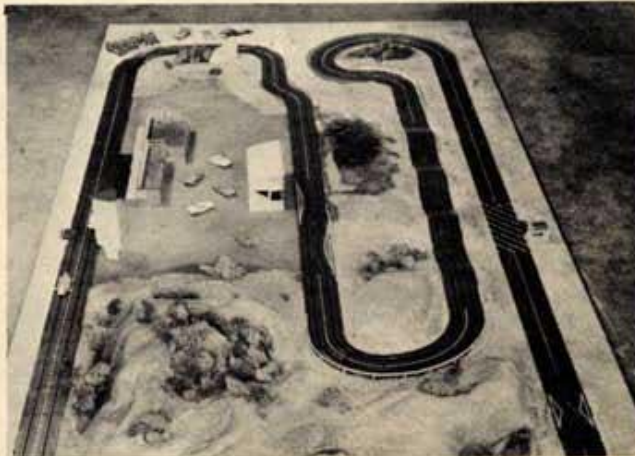
With cover removed the RO Rallye Road begins to have the look of realism we promised. Sides of hills can be brushed with mixed black Rit dye to simulate rock faces. Spray some areas with green, to simulate grass. Use darker shades.



Craft shops can supply the best "lake" mix. Natcol brand clear casting resin (about a quart), catalyst, blue dye, and "Craft Spray." Mix about 8 ounces with 2 to 4 drops of blue dye per resin label.



Pour the resin mix into deepest part of lake area and allow it to flow to its own level. If you want lake to be deeper still, wait 24 hours, add another 8 ounces. When final "pour" is dry, spray with the Natcol Craft Spray to eliminate the sticky surface of the resin. It is the "wettest" model water you can imagine! Darker area in photo is the deeper part of lake.



Dip green Lichen (available in any model railroad hobby shop) into white glue, then place in clumps around hills for trees and bushes. Buildings are last. Pit area is simpler than outlined before. Tower, grandstand, and bridge are cutout models from "sister" magazine Model Car & Track.



LEAPIN' 'MARO!

By Bob Hoepfner

Although model car racing is a new sport and is still of a tender age, its growth and development has been so rapid that there is little in the way of innovations that someone has not experimented with previously.

The use of torque reaction to perform some other function is nothing new, but this application is somewhat novel.

Most everyone has at least seen pictures of the hot stocker exhibition machines do their giant wheel stands off the starting line. Have you noticed how the effects of torque and suspension loadings work the chassis and body? There is a lot of action conveyed to the body as

they get under way and give the appearance of leaping forward.

We wanted to capture the feeling and looks of really coming off the line, with a model car.

Some experimenting on paper with linkage arms and pivot points is a must before actual construction is attempted, once you have selected the body style, motor, and chassis you wish to use. This is necessary to establish the proper pivot points, linkage lengths and angles to obtain the desired body notion as a result of the torque reaction of the motor under power.

To realize the full effects of the torque action the motor is

mounted to a separate "U" bracket inside the frame members. Both the bracket and frame have individual oilite bushings. This allows the motor to pivot around the axle independently of the chassis, contained only by a "down stop" at minimum ground clearance.

By variations in pivot points and linkage lengths, almost any kind of motion can be conveyed to the body from up at both ends, down at the front, up at the rear to the opposite up in front, or down at the rear. It all depends upon locations. A little experimenting on paper will give you the idea. You'll find this exercise a real blast!

When you shoot the juice to Hoeppe's 'Maro, stand back!

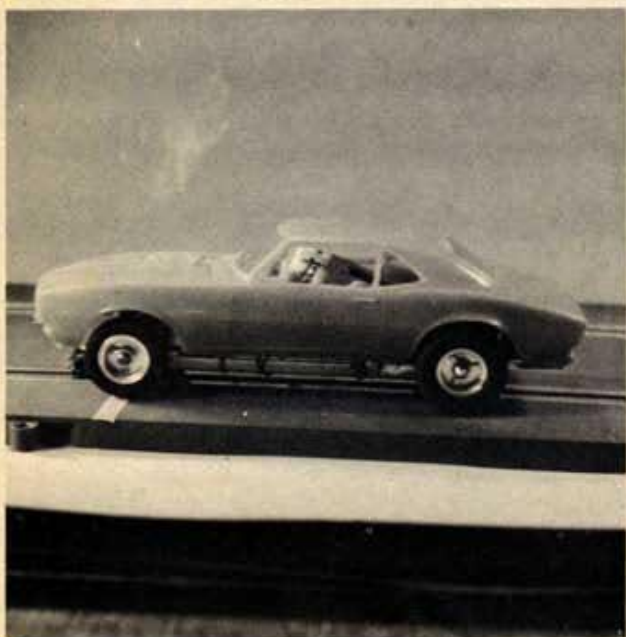
The thing will leap right off the chassis!

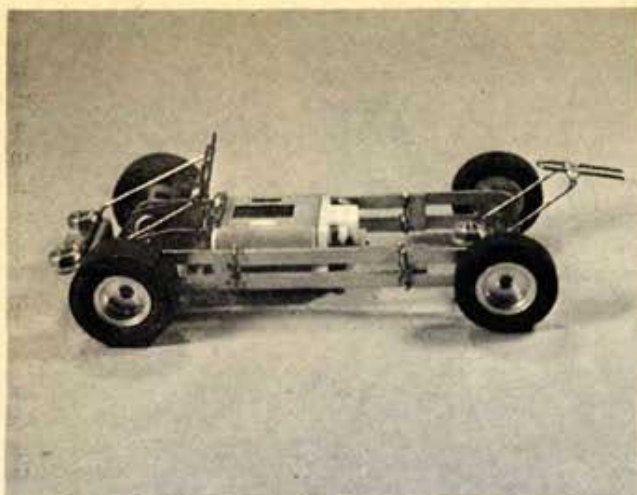
Here's how to make your Camaro do the same thing!



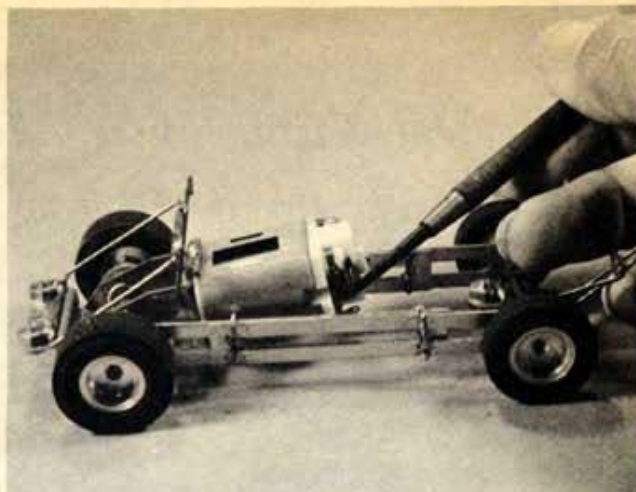
Ever been to the drag strip and watched the hot stock jobs come off the line? Study the sequence photos and you will see somewhat

the same reaction to torque loads, as imposed upon the 1:1 scale jobs. Who says we can't have realism in model car racing!





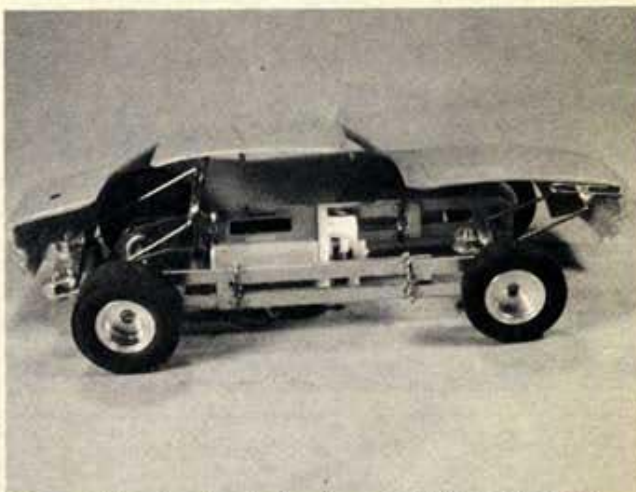
An SP80 with brass mounting bracket is installed in an old Revell adjustable aluminum frame. Motor bracket is free to rotate around axle with down stop provided by frame cross-member.



Primary linkage pivots from front edge of motor bracket and frame body mounting tab behind rear axle. Front link also attaches to body mount tab behind front axle. Angularity of links in static position determines amount of lift.



Maximum usable lift is obtained in approximately this position. Body attaches to horizontal bar above rear end of motor. Due to linkage arrangement, this bar raises almost vertically.



We sacrificed a body to give you this inside view. Height of crossbar is determined by type body used. Static height at front is adjusted by how far forward pivot point is secured to body.



Body locator at front is half of a paper clip soldered to tube crosslink. The two ends face forward as shown in previous photo. Front of body provides a stop. Adjust length to provide proper static height as well as lift.



Torque reaction of motor tends to rotate it around rear axle. This activates the linkage, lifting the rear of the body, which in turn reacts at the front. Rear linkage or top of car eventually forms the stop, limiting amount of motor rotation.

Now you can cut down on the time needed to build really fantastic models.

The whiz kids at General Motors recently unveiled a unique modeling technique that may enable modelers to produce reduced scale models of advanced automotive concepts in a fraction of the time required by current conventional processes.

Basic elements of the technique are rigid urethane foam plastic, a relatively new material that can easily be shaped to the desired form, and an acrylic polymer putty (commercially known as Liquitex modeling paste) which gives the model surface a solid texture that can be painted and fitted with metal trim and accessories to resemble a finished automobile. The process is now undergoing further development in GM's Design Studios and will be rec-

ommended for the Craftsman's Guild scholarship competition.

In a special demonstration at the Art Center College of Design in Los Angeles, Davis P. Rossi, a designing sculptor at GM Styling, showed the basic steps involved in producing a model with the newly developed method. The process begins with a set of styling drawings and sketches, a block of six-pound density rigid foam large enough to form a model in the selected scale, and a scaled modeling platform with horizontal and vertical station lines normally used by stylists to assure symmetry in auto design.

A centerline is located on both the block and the platform. Small dowels are fitted into the platform along the centerline at the approximate location of the wheels. Matching metal or plastic sleeves are fitted into the bottom of the rigid foam block at the same location as the dowels on the modeling platform. This permits the sculptor to return the model to the same spot on the scaled platform to check for accuracy as the model develops.

The modeler then makes a set of silhouette templates or profile patterns from both the side view and top view of his completed drawings. The top view template is outlined on the top and bottom of the block — the side view template on both sides. With either a band or hand saw, the modeler then follows these outlines and cuts the rigid foam to the rough shape of his model.

Again referring to the drawings, he selects major form lines and sketches these on the block to serve as guides in roughing out the shape of the model. In working the lightweight foam into the desired shape, he uses a sharp knife, half-round mill file, wood gouge, various grades of sandpaper, or any number of simple forming tools since the plastic foam has no grain and is easily formed.

As the model takes shape, the designer makes several templates to check for symmetry. If a clay model was developed first, templates can be made from it and fitted to the foam model at the corresponding station lines on the scaled modeling platform.

the newest in modeling techniques



Here's the beautiful winning entry in the '67 Fisher Body Craftsman's Guild Contest, in the Senior Division, by David Goetz. Dave put a lot of work into this model, to say the least. With the new modeling technique described in this article, you can cut down on the time considerably, without sacrificing quality.

If clay was not used, the modeler will complete one side of the model to his satisfaction while he roughs in the other side. Checking templates can be made on the finished portion and used to transfer the proper contours to the opposite side at the appropriate station line locations.

The inside of each template is coated with colored chalk or a grease pencil. As it is fitted, chalk or pencil marks rub off at any high spots to show where further reductions are needed. When all templates have been fitted, a flexible steel scraper can be used to remove any excess material between the station lines and smooth the final surface form of the model.

With all the forming work completed, the model is prepared for painting and finishing by applying several coats of diluted modeling paste — about six parts paste to one part water. The modeling paste dries to form a hard surface in a very short time — 20 to 30 minutes — and is dry sanded lightly after each coat. To assure that the sanding doesn't remove too much of the paste build-up, the first two coats are tinted with any light water soluble coloring, such as blueing or poster paint; later coats with a dark coloring. As the modeler dry sands the final coats, he knows he has sanded too deeply if the light color shows through. When the modeling paste has accumulated to about a "heavy" 1/32 inch thickness, the model should have adequate surface protection and will be ready for final finishing and painting.

At this point, the modeler draws in any lines he may wish to scribe on the surface to indicate window openings, doors, trim moldings, lights and other exterior features. When he is satisfied with their locations, he can etch them into the surface with a pin, knife, awl or any sharp-pointed tool. Grooves for inserting metal trim will also be cut so the trim can be fitted, but not installed, before the model is painted.

With this completed, the mod-

eler applies two or three coats of primer paint and finishes the model with an ordinary acrylic lacquer. Each paint coat is sanded very lightly except the final coat. It is polished with commercial rubbing compound and a hard wax. Trim and accessories are fitted and the stylists' sketches now take form in a finished model.

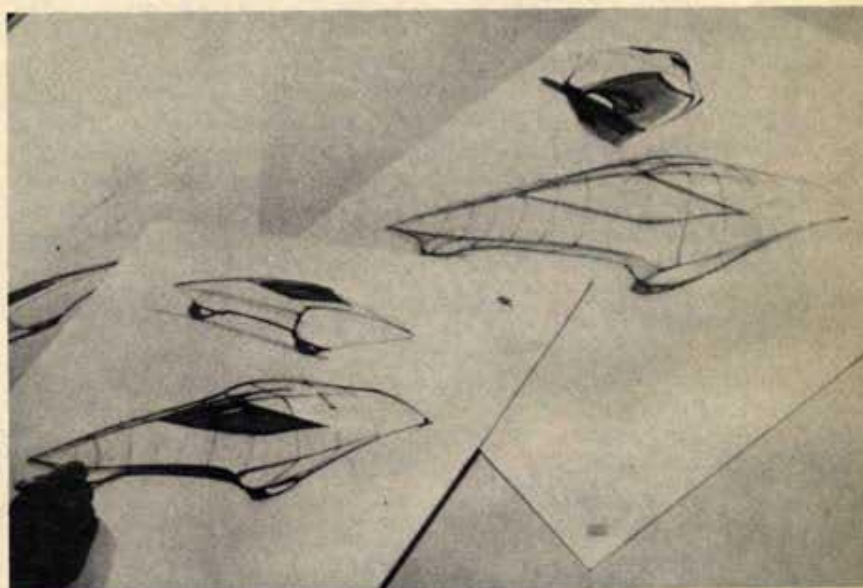
In addition to the time and cost advantages inherent in rigid foam modeling, any latent design errors or modeling mistakes can be readily corrected

by merely gluing on additional pieces of rigid foam. Minor nicks or low spots are easily corrected by filling in with modeling paste.

It is important to be absolutely sure the model is entirely complete in urethane before applying the modeling paste surface.

The process was developed in GM's Design Development Studio, under the direction of Robert W. Veryzer.

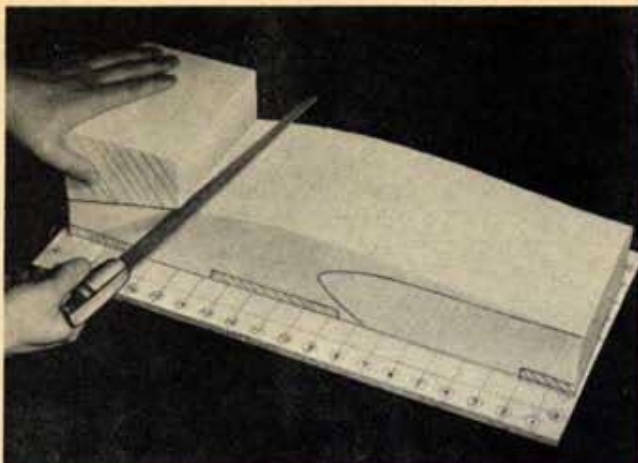
It works for these fellas, so it should work for you!



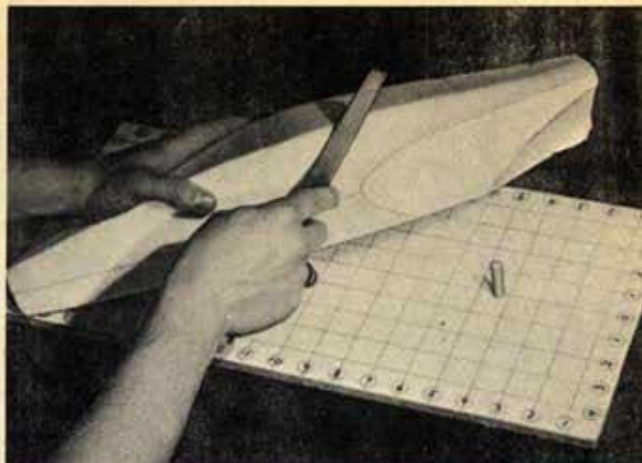
To begin your model, transfer your brain waves to paper. Work out sketches and drawings, until you are satisfied with the looks of your dream car.

Make a pattern of the shape and outline it on a block of rigid urethane foam plastic.





Rough cut the excess material away to form the general outline of the model. Rigid foam is very lightweight, with no grain, so only the simplest tools are needed to shape it.

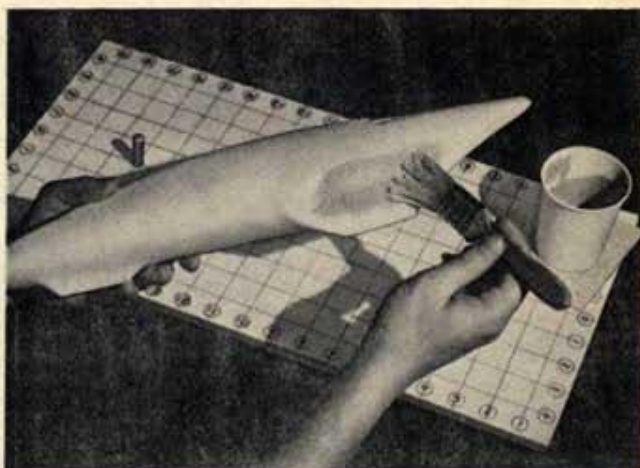
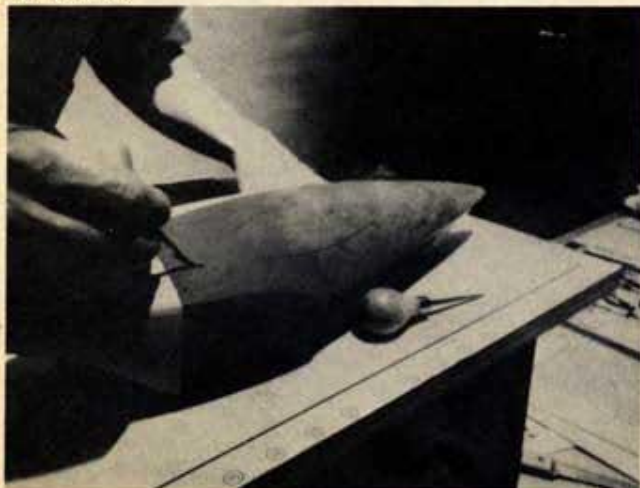


Use a sharp knife, sandpaper, and a file, to remove the surplus material from the roughed-in shape.



As the model takes shape, you'll have to make a series of patterns or "templates" of the desired form, and fit them to the car at key locations. A thin steel scraper is used to shave the foam down to the proper depth, as shown here.

Scribe shallow grooves into the surface to indicate doors, hood, trunk, and lights, or provide a seal for metal trim.



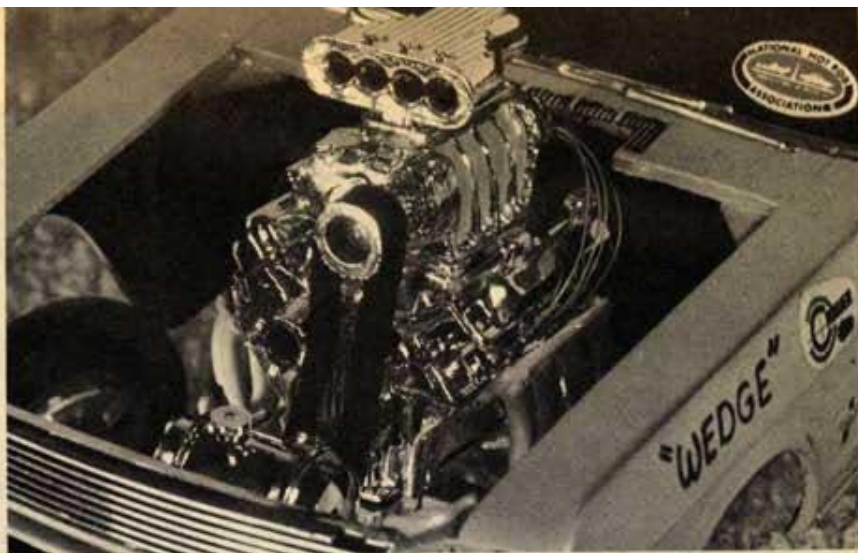
When you're satisfied that the model represents the form depicted in your sketches, coat the entire surface with a liquid modeling paste known commercially as "Liquitex." This paste dries to a hard surface in minutes, to seal the porous foam for final finishing and painting.

A few coats of primer paint and lacquer and the desired trim can be attached to give the model the appearance of a finished automobile. Easy, right?



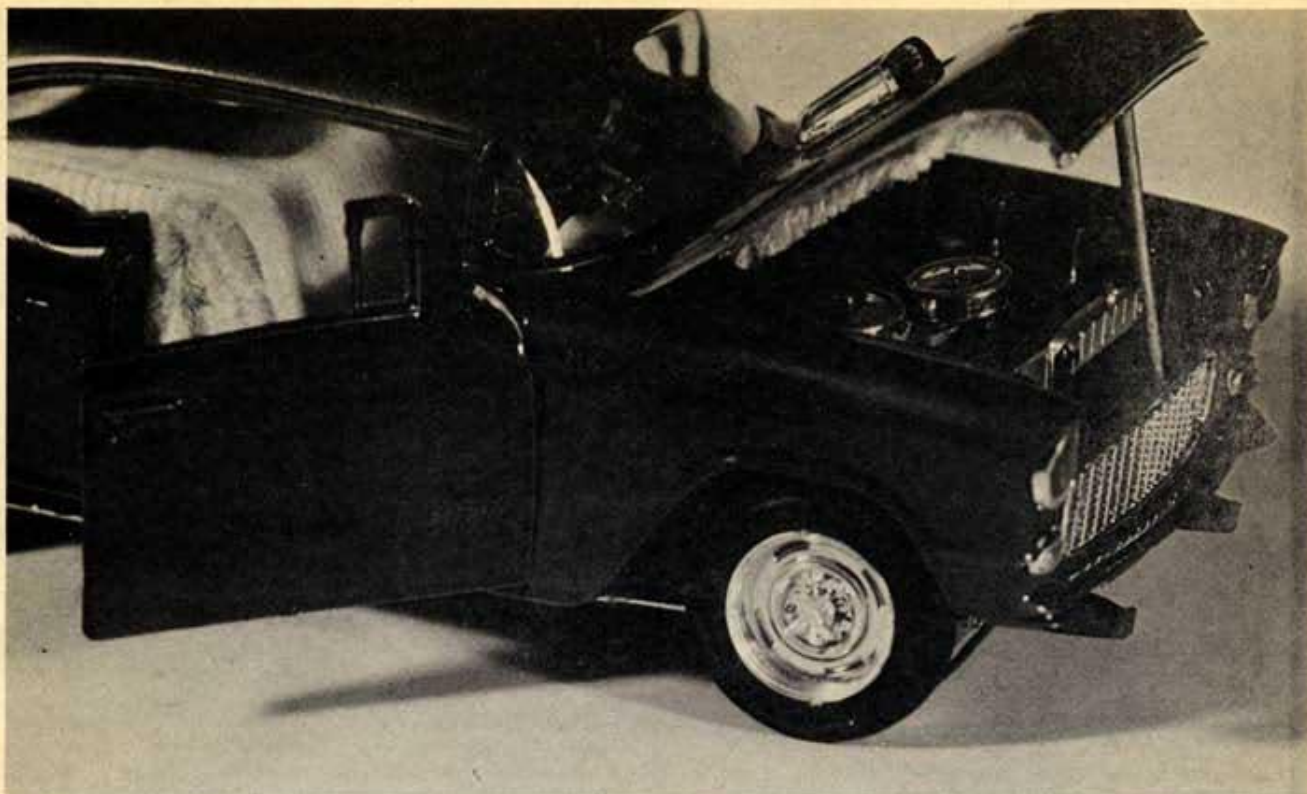


MODEL OF THE MONTH



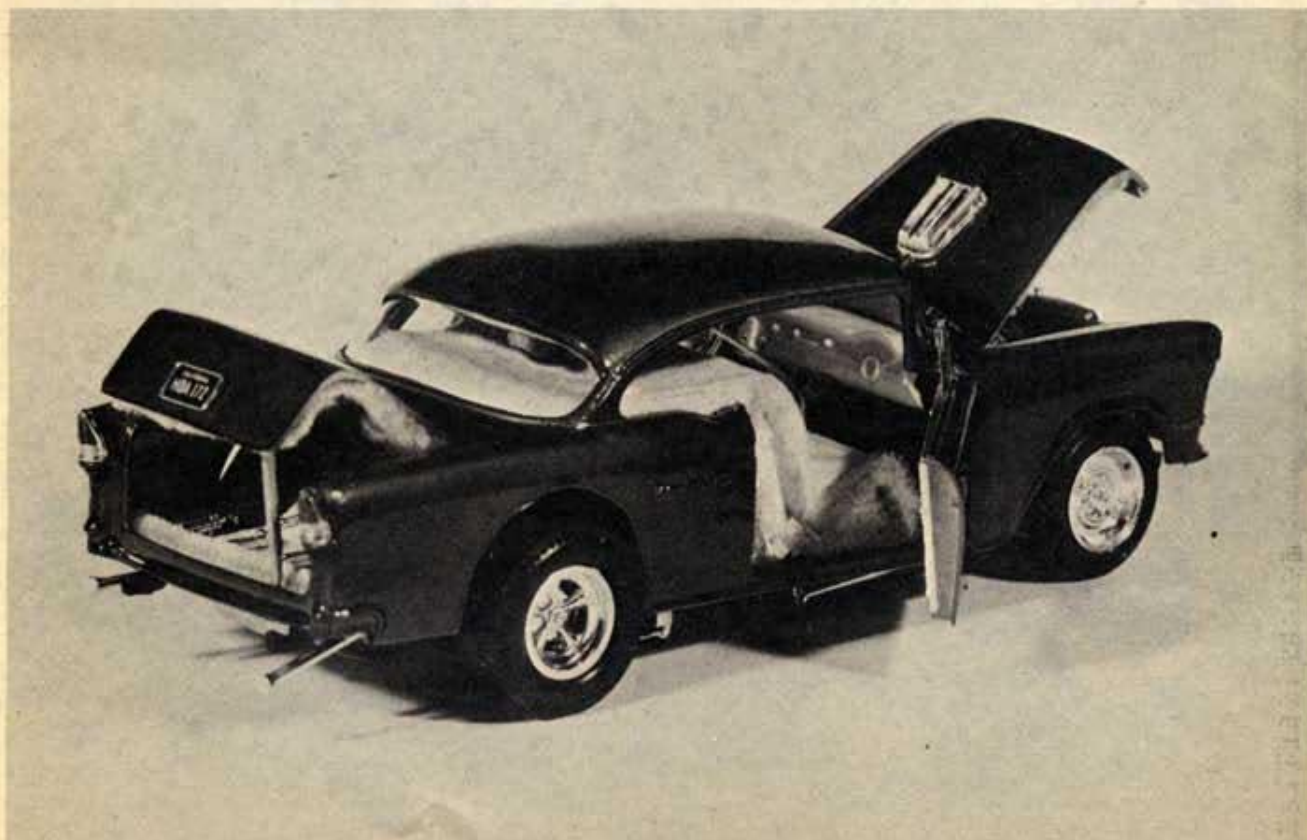
Brace yourself, Henry Borger, of 6702 34th Ave., Kenosha, Wisconsin because we're going to send you a load of "funny money" for your winning, "Funny Pony 'Tang" glitter mobile! Ol' Hank carts off the \$25 Savings Bond this month for his '66 Mustang Hardtop. Henry also gets our "Good Guy Award" because he built the car for his friend, Joe Piller, who is serving in the Air Force. Joe gave the details and specs to Henry, through the mail! How's that for a friend? The body was sprayed with AMT tan, and black primer for the vinyl top. The wheelbase has been radically shortened, and the original wheel wells were filled with epoxy filler. Epoxy is hard to work with, but the results are rewarding, according to Henry. All lettering was done

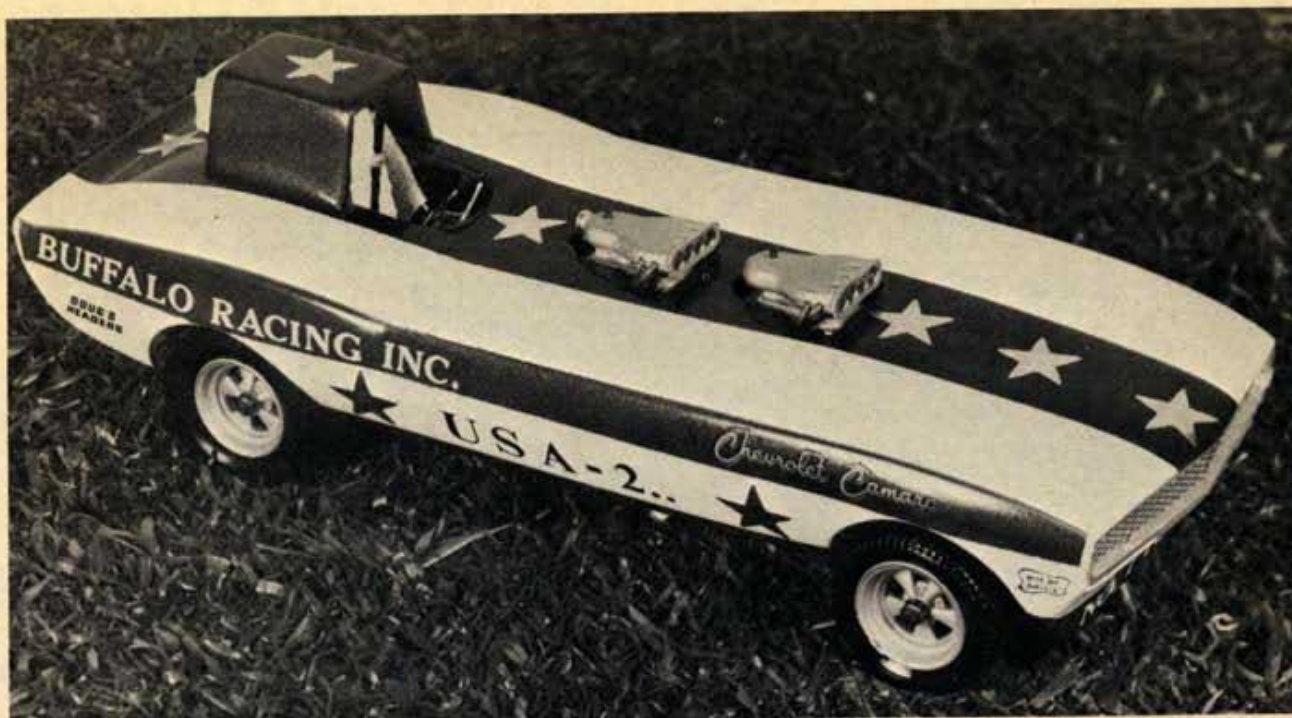
by hand. The Ford "427" came from Revell parts, with headers from a Little Red Wagon. The chassis is a chrome Revell roadster goodie, modified to fit the 'Tang. The front axle is from Monogram's Uncertain "T". A jewelry chain makes up a driveshaft loop, for safety. Wheely casters are from an airplane kit. The interior is super-detailed with pedals, hand brake, painted gauges, tach, firewall, roll bar, and a driver figure, (with a molded face mask and firesuit) sprayed Pactra silver. All panels, bucket, and floor are sprayed AMT black primer. Rear slicks are "wrinkle" slicks from the '67 Camaro hardtop, and the front tires from a Funny Car kit. Mags are used from the 67 Cougar Hardtop kit. Too cool, Hank! Congratulations!



Rick Dreiling, age 14, from Omaha, Nebraska, is the proud owner/builder of this magnificent '55 Revell Chevy. He shoehorned a Chrysler Ram Induction V-8 from a '49 Merc kit by AMT into the Chev, after fully wiring it. The headlights are tinted green to match the Candy Purisian Green body

paint. Wheel wells are radiused to match the Race-master slicks. The interior is upholstered in white corduroy and pipe cleaners. A full display of chrome tools, including a fire extinguisher and tape recorder, can be found neatly laid out in the trunk. We tip our hat to you, Rick!





The "U.S.A. — 2" is the product of a flight of fantasy from the prolific mind of Keith Schafer, of Buffalo, N.Y. Keith did a lot of whittlin' and fillin' on a AMT '67 Camaro, to come up with this way-out machine. The roof was cut off, and the opening filled with sheet plastic. The wheelbase was then lengthened 1/2" by moving the front wheel wells as far forward as possible. A front and rear spoiler was molded to the body. A canopy enclosure was

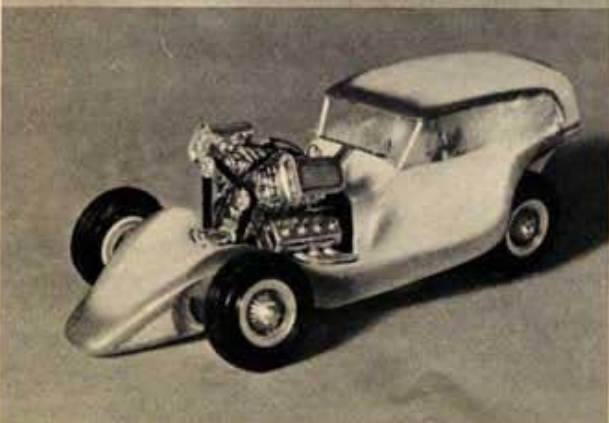
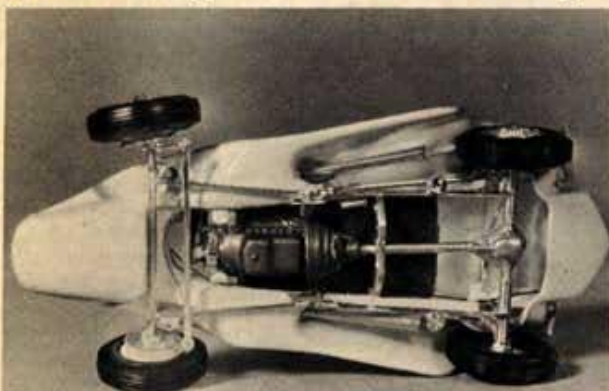
molded to the body, topside. The frame is a tube type affair, with a roll cage molded from a plastic "tree" that was heated and bent. The two Hemi engines are from AMT, and are fully detailed and wired. Tires are MPC's hollow slicks, and the mags were painted flat aluminum for that true mag look. Paint is Testor's white, metalflake red, and blue. Very sanitary looking job, Keith.





The tough lil' machine you see here is a duplicate of a car that is running around a $\frac{1}{3}$ mile oval track, near Bob Chappell's home, in Quaker Hill, Conn. Bob reports that the big car has won 12 races, and that includes a 75 lap, \$1,000 purse race! Bob started out with a '40 Willys kit, and immediately lopped off the fenders, and bent the back around a bit here and there! The side rails, bumpers, exhaust pipe and roll cage were scratch built. The engine

is a "427" Chev with two, 4 barrel carbs. The interior is card stock and plastic. Paint is AMT's Fire Orange, and the car has been completely hand lettered. Slicks are Firestones, molded together to give a 14" width. The driver of the real car is Newt Palm. This groovy lil' brute should give some of you readers ideas! If you want to really test your ability, try duplicating a real car, like Bob did.



Here's a real "scarey" missile, tagged "Fantasia" by Paul Hurly, of Scarborough, Ontario, Canada. Paul scratched up a storm, to say the least, creating the Fantasia. This is his first attempt at radical building, and from where we stand, it's a good one! The body and chassis are from AMT's Wild Dream, molded together. The nose is from the AMT Double Dragster, with fender sections from the AMT '32 Ford, and the top from the AMT '57 'Bird. The chromed Wild Dream wing is covered by a counter wing, formed of copper wire, cardstock, and a tube of body putty. A new rear end was molded with plastic wood, plastic balsa, and body putty. The body was finished with seven coats of AMT gloss white, fogged with AMT metallic green, and topped with one coat of Testor Candy Pearl White. The engine is a fully blown domehead, Chrysler, detailed with spark plug wires and fuel lines and painted AMT metallic green. The undercarriage is a fully chromed AMT Wild Dream unit, with steerable front wheels that come from the Wild Dream. Tires are from a '40 Ford by (who else?) AMT. The interior is covered with white maribou. The roof liner and seat insert is pearl green Naugahyde, from Monte Keenaroonie, Paul!

HOW TO ENTER OUR CONTEST

You can enter any kind of a model you like (train, plane, boat, car, etc.) so let your imagination run wild! Just send one or two sharp black and white (no color please, we can't use it) photographs of the model, and a brief description of what you have done to it. Remember, other readers are interested in what you have done to your model, so be specific when mentioning the parts that you used. Send to: Editor, MCS, 171 Barrington Place, West Los Angeles, California 90049. Sorry, we can't return photos.

?

QUESTION SESSION

Q I am building a '57 Chevy Funny Car. I would like to install a blown Chrysler "426 Hemi." Could you tell me where to find this engine without buying a kit? Is there a kit that would have another engine plus the "Hemi?"

I think your section on "Detail For Real" is really good. Keep up the great tips!
CRAIG VAN WINKLE
Norman, Okla.

A AMT and Revell had a line of different parts that could be bought in separate packages. Unfortunately these were discontinued more than two years ago. Both had the early Chrysler "Hemi" engine. These parts packs were one of the best things for model building since the kit, but it seems some of the packages did not contain the most popular items and did not sell. Hence, this shot down the entire line of parts. You can get the "Hemi" engine in AMT's '67 Barracuda kit which comes with two engines.

Craig, I'm glad you could use some of the tips I have found that work well in detailing models. I feel that I am building a model of a real automobile and it should look like a 1/25th size one in as many respects as possible. Thanks for your letter.

Q I've seen a few models with full belly pans and would like to put one on a car I'm building. I want to join the pan to the body so there is no joint. How do I get the interior in? Also, what is a suicide spring and what are solenoids?

You've got a boss magazine.
GENE STEFFANSON
Troutdale, Ore.

A Full belly pans look good on some cars but they do not belong on all cars. Belly pans are never seen on some types of cars. I do not know the type you are building, but fitting the pan to the body and filling in the seams would look good, although it would not look like the real cars. The problem with installing it as you planned on a model or the real car, is that you could not get the interior and other parts in, or repair the real one if trouble developed. I suggest that you make the pan fit to the edges of the body with just a seam between them and leave them as two pieces. The real ones are like this so the model should be the same.

A suicide front end (spring) is the name given to the front suspension used on a great many hot rods. It is the type that has the leaf spring on top of the front axle running the same way. It is fitted to the front crossmember by way of a mounting bracket out front. This setup puts the front axle assembly out in front of the car quite a bit. The suicide front end is commonly found on Model "A" and "T" bodied rods. With this setup, the entire weight of the front of the car is resting on this bracket in front of the crossmember, instead of the spring being under the crossmember. It is not hard to see how the name came about.

Solenoids are the electric motors used to operate power windows in car doors and in some trunks. These are used by the customizer on trunks to allow the removal of the lock for a smooth deck lid. Then the trunk can be opened by pushing a button inside the car.

Q If you ask me, the decals in the AMT '67 kits are not very good. When I put them on I can't seem to get them on the car without looking dumb. Please tell me how to apply them to look right.

If you send to a model company and ask if you can buy parts, will they send them to you?

TIM KAUFENBERG
Lamberton, Minn.

A I do not know what happened to your decals as I have used many of those in the '67 kits and have not had any trouble. Cutting and applying decals can be a little tricky.

The decals have been made a

little differently in the past two years. The entire decal sheet now is covered with a clear coating. The older ones had each decal coated separately with just a small area around the outside of each one. To do a neat job of putting on decals of any type, you should cut them out around the decal itself. Do not leave any clear coating around the outside edge. I know the real ones have a clear edge around them but ours are only 1/25th size and there would be almost none at all on one this size.

The model companies are not set up to sell parts as you and everyone else would like. The only thing they do along this line is insure a model builder that he gets a complete kit. If some part happens to get misplaced when boxing or by someone lifting it from the box at a store, they replace that part which is missing, but only that part, not all the parts to make up an engine or something similar. This is an expensive procedure for the different companies but one they feel must be offered to their kit buyers.

Q I am building a '40 Willys and would like to know where I can get spoked wheels as in the Piranha kit without buying the whole kit. Do you know if any company plans to make a vacuum formed Piranha body for slot cars?
MARK STIVERS
Pacoima, Calif.

A The Accessory Packs had these spoked wheels but those packs are a thing of the past and you will have to get the wheels from a regular kit. Besides the Piranha kit having this type of wheel, they are also found in the '32 Ford Victoria kit, Falcon Funny Car kit and the AMT Double Dragster kit. I have never seen a vacuum formed Piranha, but there are so many companies making clear plastic bodies for slot cars that there just might be one coming out that I have not seen yet.





If the avalanche of mail is any indication, it would seem that an R/C car association is on its way. Advice, questions, information, names for the organization, and more questions have been pouring into this office in a steady stream since my first article appeared in the June issue of M.C.S.

First let me express my appreciation for the time and effort of those who have written in regarding R/C cars and the possibility of forming an organization. Letters to the author are exactly like applause and just as welcome, but like applause it is impossible to thank each one personally, or to answer each question individually. With this in mind I will try to answer some of the most asked questions in this column, and others will be covered in articles elsewhere in MCS in the near future.

Many of you readers have expressed concern about the future of R/C cars. Let me say first that these cars are not toys, particularly a fully proportional R/C gas powered car. They represent much time and money invested by the builder himself, or a manufacturer, or both.

R/C car builders and drivers have to be dedicated, and this type of hobbyist is not a "fad-dist." He enjoys building and driving his car both for show and competition. The steady progress of the R/C airplanes and boats for many years has proven this and cars will not be any different.

The throaty roar of the gas powered car has begun to penetrate the walls of some of the manufacturers of R/C equipment and they have been doing some research in our particular field. We should have some news soon on one or more complete units that are engineered and priced specifically for our use. These would be ideal for the operation of boats also.

One of the major manufacturers of aircraft R/C equipment has given me a tentative price of two hundred and fifteen dollars for a complete proportional control unit, suitable for gas cars. This includes a five channel digital transmitter and receiver, two servos, power pack, harness and switch, and charger. It is wired so that two more servos can be added at any time, thus making it a full-house proportional for any use whether it be a car, boat, or aircraft.

I have just obtained the new "AMERICAN EAGLE" gas powered race car, courtesy of the L. M. Cox Co., of Santa Ana. What a beauty! And those new wide profile tires! I can hardly wait to gas it up and let it unwind on the end of a long, strong tether. I will have a complete report on this new Formula One gas powered race car in the next issue of MCS. Right now I am just dreaming about what a fierce machine this would be if I could possibly R/C it! Oh well, we can all dream.

I have asked my new boss, Ray Hoy, for some space (You've got it Charlie—Ed.) to give special thanks to Robt. Clendenen, H. Wolcott, Joseph Lee, Rickey Westfield, Bob Kania, Bart Tomascak, D. M. Rhodewalt, Dario C. Sacchi, and the many others who have written to me.

We still need more name suggestions for the new association, so keep those letters coming in. Your letters are a real show of strength and with them we will be able to impress the manufacturers that we mean business.

Last month I had the pleasure of meeting Norb Meyer from Garden Grove, Calif. Norb, in his spare time, is also a very active builder-driver of R/C gas powered cars. He has been almost two years in the development of his cars and all of those hours are well represented in the finished product.

I had the opportunity to look

his cars over very closely, and also to watch them in action, and when I say action I mean just that! Would you believe a SPEED-SHIFT from low to high range via a servo-operated transmission?

Norb and I spent about three hours talking about the development of our cars, and in many ways they were almost parallel. We had many of the same problems and some were solved in the same manner and others differently, but the end results are very satisfactory to both of us.

Because of his desire to have an operating transmission, both for realism, and also for better acceleration, Norb decided on 1/8 scale, which allowed him more room for the fully proportional R/C gear which includes three servos. The body shell is a beautiful scratch-built fiberglass reproduction of the famous Chaparral. A portion of the chassis is also fiberglass, laminated on a core of styrofoam. Aluminum wheels and sponge rubber tires are used to increase traction. Suspension is a combination "A" frame-torsion bar up front, and a modified swing-axle rear which gives the car a very realistic appearance and also helps considerably in the cornering department. Differential and transmission are both easily removable for cleaning or service.

All of this is an indication that we are on the right track, and that the R/C gas car hobby is in a very interesting and challenging growing stage.

Your ideas and suggestions will help form the basis for the rules and regulations of a good organization that can and will develop for the R/C car builder and driver.

I shall now turn off my transmitter and get my batteries charged for next month.

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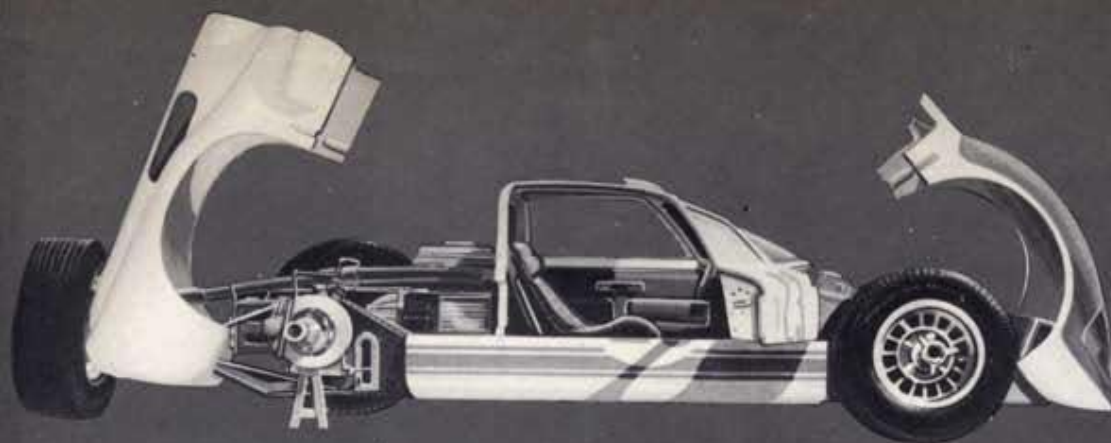
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